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## STUDENTS' CORNER

### Culturally Appropriate Physical Activity Interventions with Indigenous Communities of Canada

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#### Abstract

Finding innovative and culturally relevant ways to increase physical activity participation in Indigenous peoples is important for optimal health and wellbeing. Evidence suggests that physical activity promotion strategies should target healthy lifestyle behaviours, as they recognize the complex socioeconomic, sociocultural, and historical barriers faced by Indigenous populations. Increasing physical activity levels in Indigenous peoples can reduce the risks of metabolic syndrome and other chronic diseases within Indigenous communities. This evidence-based, student driven, review is supplementary to a knowledge translation video, with the goal of educating the general public on the health-related benefits of culturally appropriate and safe physical activity interventions for Indigenous peoples. **Health & Fitness Journal of Canada 2018;11(2):122-128.**

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#### Introduction

Traditionally, Indigenous Canadians lead healthy lives that were free from the presence of chronic diseases (Dapice, 2006; Foulds et al., 2013). However, over the past four to five generations, the Indigenous populations have undergone a significant cultural shift that has led to marked lifestyle changes including: alterations in diet and a decrease in physical activity levels, as well as

increases in the consumption of alcohol and use of tobacco (Foulds et al., 2013). Additionally, Indigenous populations exhibit lower life expectancy, lower education and employment attainments, and reduced access to health care services, in comparison to non-Indigenous populations (Foulds et al., 2013). These disparities are amplified by numerous socioeconomic and historical factors, such as colonization and the residential school system (Foulds et al., 2013). As a result, Canada's Indigenous populations have exhibited a dramatic increase in the prevalence of many medical conditions including type 2 diabetes, obesity, cardiovascular disease, and most notably the metabolic syndrome (Foulds et al., 2013).

The metabolic syndrome is characterized by impaired glucose homeostasis, abnormal lipid lipoprotein profiles, hypertension, and abdominal obesity carrying an increased risk for cardiovascular-related morbidity and premature mortality (Srivastava, 2012). Currently, 25% of Canadian adults aged 40 to 59 yr and 39% of Canadian adults aged 60 to 79 yr have been diagnosed with the metabolic syndrome (Statistics Canada, 2015). However, Canada's Indigenous populations currently experience a much greater prevalence of the metabolic syndrome and other metabolic conditions (such as diabetes)

compared to non-Indigenous populations (Foulds et al., 2013). For this reason, the development of inclusive and culturally relevant physical activity interventions is an important field of study (Foulds et al., 2013).

Health research should focus on finding innovative and culturally relevant ways to improve physical activity participation in Indigenous peoples, because the health-related benefits of physical activity are irrefutable (Warburton et al., 2006). Physical activity is a primary preventative and secondary treatment strategy against more than 25 chronic conditions (Warburton et al., 2006; Warburton et al., 2010; Warburton and Bredin, 2016; Warburton and Bredin, 2017; Warburton and Bredin, 2018). It is important to increase physical activity participation in Indigenous communities because Canada's Indigenous populations are at high-risk for metabolic syndrome, which is a precursor to cardiometabolic diseases, stroke, and related complications (Foulds et al., 2011a; Foulds et al., 2011b; Foulds et al., 2012a; Foulds et al., 2012b; Foulds et al., 2013). In fact, rates of obesity, diabetes, and cardiovascular disease in Canada's Indigenous populations mirror that observed in developing countries (Foulds et al., 2011b; Yusuf et al., 2001; Reddy and Yusuf, 1998; Liu et al., 2006). For these reasons, physical activity promotion should focus on developing inclusive and culturally relevant interventions that address the complex socioeconomic, sociocultural, and historical factors that influence physical activity participation in Indigenous peoples (Foulds et al., 2013).

### **Key Findings**

#### *Current Lack of Physical Activity Participation*

Physical inactivity is an important modifiable risk factor for the multiple chronic diseases exhibited in Indigenous peoples; however, a recent systematic review revealed that few individuals meet international physical activity recommendations (Foulds et al., 2013). In this systematic review, it was revealed that approximately 27.2% Indigenous adults (via self-report) met international physical activity recommendations (9% via accelerometry), and that 26.5% Indigenous children/youth (via self-report) met international physical activity recommendations (45.7% via pedometry/accelerometry) (Foulds et al., 2013). Overall, Indigenous adults reported lower physical activity levels since 2000, compared to the 1990s (Foulds et al., 2013). The findings and implications reveal the importance of designing Indigenous led, inclusive, culturally appropriate, and sustainable healthy living interventions within Indigenous communities to reap the health and wellness benefits of physical activity.

#### *Importance of Community Based Physical Activity Interventions*

Community-based and Indigenous led interventions have been shown to be highly successful in supporting Indigenous peoples to become more active (Foulds et al. 2011a). In a study that began in 2007, and lasted for three years: 273 participants were recruited to partake in an investigation with the aim of assessing the health benefits of a community-based physical activity intervention (Foulds et al., 2011a). Before completing one of three self-selected 13-

week interventions, each participant underwent testing of body composition, blood pressure measurements, cholesterol levels, and physical activity behaviour. This study led to significant health benefits in all three training groups, with the least active participants at baseline particularly benefiting from the community-based physical activity intervention (Foulds et al., 2011a). The success of this study highlighted the importance of, and significant need for, additional interventions among Indigenous peoples. Unfortunately, the majority of interventions have not taken a culturally targeted or safe approach to lifestyle behaviours that are appropriate in Indigenous communities (Foulds et al. 2013). A culturally relevant and safe approach is necessary because traditional guidelines to increase physical activity are not effective (Hsu and Warburton, 2018), as they do not consider traditional Indigenous ways of understanding or doing.

### *Wholistic Approaches to Physical Activity Participation*

Indigenous peoples tend to value traditional knowledge and view health and wellbeing from a more wholistic perspective, rendering current generic physical activity guidelines ineffective at addressing physical inactivity as a modifiable risk factor at the community level (National Aboriginal Health Organization, 2011; Hsu and Warburton, 2018). A wholistic approach to health is effective because it considers not only physical wellness, but also emotional, mental, and spiritual wellness. These determinants of wellness relate strongly to a balance of the mind, body, and spirit with both the community and environment (National Aboriginal Health

Organization, 2011). Therefore, it is essential that physical activity interventions also consider the complex interplay among socioeconomic and sociocultural factors. This is important as these factors shape healthy lifestyle behaviours, which ultimately influence physical activity participation. One method to design culturally relevant physical activity interventions is to use a strength- and community-based, approach. Community-based, Indigenous led, participatory strategies are especially important in rural communities.

### *Community Barriers Preventing Participation in Physical Activity*

There are several of community level barriers that prevent Indigenous peoples from fully benefiting from the health and wellness benefits associated with participating in physical activity. Firstly, Indigenous peoples often live in rural and remote areas. According to the Aboriginal Demographics from the 2011 National Household Survey, 45% of registered Indians live on a reserve, while 12% live in rural areas; meaning that 43% live in a population centre (Statistics Canada, 2011). As a result, the environmental barriers that they face can include varied or unknown access to recreational facilities, the presence of potentially dangerous wildlife, and inclement weather (Foulds et al., 2013). In addition, there are multiple safety hazards present including a lack of sidewalks, poor lighting and lack of streetlights, and uneven road surfaces (Foulds et al., 2013). These conditions may make it more challenging for individuals living in rural areas to partake in routine physical activity.

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### *Individual Barriers Preventing Routine Physical Activity Participation*

There are also a number of personal barriers that prevent participation in physical activity. A number of these barriers, such as time constraints, fatigue, and family responsibilities, are reported by other populations (Foulds et al., 2013). However, some barriers, such as socioeconomic factors, affect Indigenous populations to a greater extent. In general, the employment rate for Indigenous people is much lower than the general population of Canada. According to Statistics Canada, Indigenous people are twice as likely to be unemployed compared to non-Indigenous people (Statistics Canada, 2006). With regards to income, Indigenous employees make considerably less on average than their non-Indigenous counterparts. In 2010, the median income of Indigenous people was approximately \$20,000 compared to \$27,600 for non-Indigenous peoples (Statistics Canada, 2015). As a result, Indigenous people may have limited financial access to fitness or recreation program or centres, such as being unable to afford gym memberships or drop-in fitness classes.

### *Historical Barriers Preventing Physical Activity Participation*

Indigenous peoples face historical traumas that affect their lifestyle, health, and wellness. It has been argued that colonization eroded the Indigenous knowledge base required for effective development and healing of Indigenous peoples (Battiste, 1998). For example, due to the assumption that the English language is superior, the Canadian government has required all First Nations Bands to adopt provincial curricula, which in most cases, was “developed

without Aboriginal input and written in English” (Battiste, 1998). Other effects of colonization include the loss of traditional lands and practices, which has forced many Indigenous peoples to adopt modern conveniences and some of the detrimental aspects of Western lifestyles (such as poor diet, sedentary behaviours, and physical inactivity)

Considering the unique barriers faced by Indigenous peoples is an essential component in the implementation process of physical activity interventions. Specifically, it is necessary that the barriers be considered at a community level, as cultural engagement within one’s community is strongly associated with physical activity (Foulds et al., 2013). The interventions should be designed locally with a strong community participatory perspective in order to reflect diverse Indigenous views on health and wellness. Additionally, growing Indigenous research demonstrates the need for healthy lifestyle interventions to include traditional Indigenous practices (such as berry picking and fishing) that aid in cultural healing, familial relationships, connection to the land and water, and the passing of knowledge within the community. Lastly, interventions should include health education and promotion for the entire community, while promoting respect, inclusiveness, and shared learning (Colomeda and Wenzel, 2000).

### *Current Community-Based Strategies to Physical Activity Participation Within Indigenous Communities*

There are a number of prevention programs being implemented in Indigenous communities across Canada. For example, a novel transCanadian primary prevention strategy was

developed in 2013 (headed by Dr. Paul Oh at the University of Toronto). This three-year program was a comprehensive lifestyle intervention focusing on addressing multiple healthy lifestyle behaviours including smoking cessation, alcohol intervention, healthy eating, and physical activity. This collaborative prevention program, titled Activity, Smoking Cessation, Healthy Eating, and Alcohol Education, Intervention, and Motivation Program (ACCELERATION), now serves as a model for the primary prevention of chronic diseases (such as cancer, heart disease, and diabetes). The study included more than 3,000 individuals from across Canada who participated in a weekly education, coaching, and motivational interviewing sessions, in addition to exercise training. Importantly, Indigenous peoples from across the province of BC participated in this initiative (working in collaboration with Drs. Darren Warburton and Shannon Bredin at the University of British Columbia).

Key outcomes from the study included increased physical activity and healthy eating, a reduction in tobacco use, and modified alcohol consumption (University Health Network, 2015). An improvement in lifestyle intervention risk factors were not only achieved during the program, but were maintained via digital technology post-program. This intervention served as a successful and integrated approach to prevention and treatment of (primary, secondary, and tertiary) chronic disease. In BC, the program was specifically tailored to the aspirations of Indigenous peoples with Indigenous community leaders, Elders, and youth playing key roles in the design, implementation, and interpretation of the healthy living intervention.

### Conclusion

Although thought to be historically rare, the metabolic syndrome and diabetes are increasingly observed within Indigenous peoples. Mounting evidence suggests that culturally safe and appropriate interventions, which take into account the community's unique aspirations, strengths, and barriers, are successful in supporting individuals to make healthy lifestyle changes.

### Authors' Qualifications

The authors' qualifications are as follows: Emma Gerrard, BKIN student; Henry Lai, BSc, BKIN, HFFC-CEP; Darren Warburton, MSc, PhD, HFFC-CEP.

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