Physical Activity Participation and Cardiovascular Responses of Children to Community-based Guided Active Play
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Over the past few decades, growing evidence indicates that health of Canadian children, as well as children of other developed nations, has deteriorated. A sedentary lifestyle and/or a decline in physical activity participation during childhood has been associated with the increased prevalence of poor health status, including reduced aerobic power, higher blood pressure and poor vascular (blood flow) function. Despite this association, the timing and sequence of children’s (5-12 years) developmental patterns for body composition and cardiovascular parameters are not understood. Understanding children’s developmental patterns may be an important step in planning PA intervention programs that target specific goals, such as improvements in cardiovascular health and/or body composition. Moreover, whether the timing and sequence of developmental patterns influence the benefits of a community-based children’s physical activity program, focused on improving aerobic power and blood pressure, requires further investigation. Of particular importance is the impact of the ‘dose-response’ relationship between physical activity participation and cardiovascular improvements (aerobic power, blood pressure and vascular function) for community-based physical activity programs. Therefore expanding our understanding of the timing and sequence of children’s developmental patterns and the influence that community-based physical activity participation has on cardiovascular health and fitness is essential during childhood and adolescence. Three research projects are being developed to examine (a) the developmental patterns for growth (height, weight, BMI) and health and fitness (aerobic power, blood pressure, muscle strength, muscle power, and waist circumference) variables, (b) investigate the ‘dose-response’ relationship between physical activity participation and cardiovascular responses for children (8-12 years) following a guided active play program, and (c) study the effects of increased physical activity participation and/or fitness status in a community-based guided active play format on vascular function in children and young adults, and to determine how much physical activity and/or fitness is needed to promote cardiovascular health.