Changes in objectively measured physical activity in adolescents with Down syndrome: the UP&DOWN longitudinal study

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Abstract

Background It is a priority to understand that physical activity behaviour over time is a priority in Down syndrome population in order to design and promote successful interventions to maintain or increase levels of physical activity. We aimed to study 1 and 2-year changes in objectively measured physical activity among a relatively large sample of adolescents with Down syndrome.

Methods This study comprised a total of 99 adolescents with Down syndrome (38 girls) aged from 11 to 20 years old at baseline. Participants with valid accelerometer data at baseline and at least one of the follow-up visits were included in the analysis.

Results Overall, levels of physical activity observed in adolescents with Down syndrome declined from baseline to follow-ups, but these changes were not significant (all $P > 0.05$). Moderate-to-moderately high tracking of physical activity was observed in adolescents with Down syndrome (all $P < 0.001$).

Youths who met physical activity guidelines at baseline demonstrated a greater decline in physical activity in 1 and 2-year changes ($P < 0.05$), although they were also more likely to meet physical activity guidelines at 1 and 2-year follow-ups ($P < 0.05$).

Conclusions Adolescents with Down syndrome do not change their levels of physical activity at 2-year follow-ups, but those who met physical activity guidelines presented stronger declines in physical activity over time.

Keywords adolescents, intellectual disability, physical activity, prospective study

Introduction

The health benefits of physical activity on chronic diseases throughout the lifespan are well established (Lee et al. 2012). Based on this knowledge, encouraging adolescents to engage in at least 60 min per day of moderate-to-vigorous physical activity is a public health priority (Physical Activity Guidelines Advisory Committee 2008; Tremblay et al. 2011). Because today’s adolescents are the adults of