

Background

- Children's adherence to movement behaviour (MB) guidelines (i.e. physical activity, sleep, and sedentary time) positively impacts their health indicators (HI) like quality of life and mental health¹
- MB guideline development did not consider children with a chronic medical condition or disability (CMCD)²
- Accelerometers provide accurate MB measurements but may not be feasible for children with CMCDs, highlighting the need for practical tools^{3,4}

Objectives

- 1) Pilot a novel health survey to determine the representation/recruitment rate of children with CMCDs/their parent to participate
- 2) Determine criterion validity of survey MB aspects against device-based measures
- 3) Explore the relationship between MBs and HI in children with CMCDs

Methods

- **Population:** 2,000 children, ages 12-17 years, with a CMCD for ≥ 1 year and their parent/guardian
- **Recruitment:** Currently, from McMaster Children's Hospital subspecialty clinics and the community
- **Instrumentation:** Health surveys assessing MBs and HI
 - A subset of 400 children will wear a waist-worn accelerometer (non-ambulatory children will wear a waist and wrist-worn accelerometer)

Progress to date

- Completed pilot phase 1 with 17 children/parent dyads
- Launched full protocol in February 2024 with 6 dyads currently participating
- Ethics submission at 3 other locations (CHEO, California State Fullerton, Dalhousie) to begin recruitment
- Two families have agreed to be family research partners on the MOMENTUM team
- Increasing recruitment at the McMaster site by recruiting in multiple subspecialty clinics

Significance

For children with CMCDs, this knowledge may:

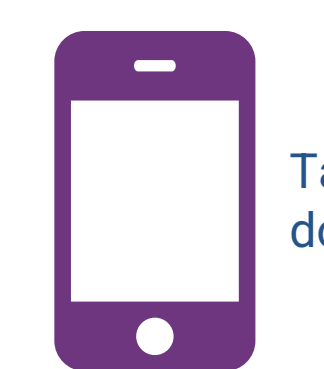
- Improve their quality of life
- Promote independence
- Enhance functional abilities
- Relieve condition-related symptoms
- Reduce the risk of developing comorbidities

References

1. Brown DMY, Kwan MYW. Movement Behaviors and Mental Wellbeing: A Cross-Sectional Isotemporal Substitution Analysis of Canadian Adolescents. *Front Behav Neurosci.* 2021;15:736587.
2. Children & Youth 5-17 Years – 24-Hour Movement Guidelines. <https://csepguidelines.ca/guidelines/children-youth/>
3. Trost SG, Loprinzi PD, Moore R, Pfeiffer KA. Comparison of Accelerometer Cut Points for Predicting Activity Intensity in Youth. *Medicine & Science in Sports & Exercise.* 2011 Jul;43(7):1360.
4. Forseth B, Papanek PE, Polfuss ML. Feasibility and applicability of Evenson sedentary behavior cut points applied to children with and without intellectual and developmental disabilities. *Disability and rehabilitation.* 2022 May;44(10):1996.

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Anticipate the survey to be a valid and reliable tool for measuring movement behaviours in children with a chronic medical condition or disability.

