

Feasibility Testing of a Home-based Exercise Intervention delivered by eHealth in Children with Cerebral Palsy who are Ambulant

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Background: Cerebral palsy (CP) is the most common physical disability in childhood (1). Children with CP who are ambulant (CP-A) are less physically active than children without physical disabilities (TD) (2), increasing their risk of secondary health complications and reduced participation (3). eHealth may offer opportunities for accessible home-based exercise interventions (4), but its feasibility in children with CP-A needs further research.

Objectives: To develop, feasibility test, and map the conditions for future implementation of a home-based exercise intervention using an eHealth solution in children with CP-A.

Methods: A mixed methods approach with an adapted participatory design is used (5). The development and the feasibility testing follow three phases: development, refinement and finalising. Eight children aged 10–16 years (three with CP-A and five TD) are recruited via habilitation services and social media and allocated into two intervention groups. The intervention consists of two six-week periods of home-based cycling exercise; moderate-intensity continuous and high-intensity interval exercise with an eight-week wash-out period in between. Exercise is performed three times a week and delivered via a tablet app enabling communication, planning and feedback. Exercise sessions will be supervised live online through the app during the three first weeks and thereafter delivered via pre-recorded videos in the app. Feasibility is evaluated continuously using predefined progression criteria addressing process, scientific, management and recourse-related uncertainties. Data are collected through the app, field notes, questionnaires, and semi-structured interviews.

Results: The first exercise period for intervention group one has been completed, including two children with CP-A and two TD. All participants included were recruited through social media and completed a median of 11 exercise sessions (IQR 8-12.5) out of 18 possible sessions. No exercise session was rated as poor. Participants reported being able to follow the exercise program in 36 of 38 registered exercise sessions. The second exercise period for group one is ongoing. Two participants dropped out prior the second period, and one participant withdrew during second period due to difficulties adhering to the video-based training or extended travel abroad. The second intervention group will include one child with CP-A and three TD, starting in the end of January 2026.

Conclusion: Results contribute to increased knowledge about the development and feasibility of home-based exercise interventions supported by eHealth for children with CP-A. By focusing on development and feasibility, this study may establish a foundation for future trials assessing the effects of exercise for children with CP-A.

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