Quantifying Children with Down Syndrome's First Interactions with Mobility Aids

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Background

Self-initiated mobility supports a child's development of independence, cognitive and social skills by increasing opportunities for exploration and interactions with people and their environment. Children with Down syndrome experience delayed motor development. Access to independent mobility at the same time as their peers through the use of mobility aids, may promote the development of cognitive, language, social, and other motor skills, benefitting their future development. However, children with Down syndrome and other similar motor delays are not typically provided with mobility aids, even for a short period of time.

Project Aims

This project aims to collaborate with families of young children with Down syndrome to:

- **Understand families' perceptions** on the use of mobility aids by children with Down syndrome who are not yet walking.
- **Assess** how mobility aids influence **children's exploratory behaviors** during play.
- **Evaluate** how mobility aids affect **muscle activation,** and children's **body posture.**

Benefits to the Community

By participating in this project, children and their families will help to provide new knowledge that can support children with Down syndrome and other similar motor delays in accessing mobility aids for use at home and in the community. Families' expertise and feedback will help shape the development of future interventions for children with Down syndrome. Together, we can enhance access to mobility aids, empowering young children with Down syndrome to achieve greater independence and participation.

Benefits to Participants

Participants will receive financial compensation, and each child will receive a developmentally appropriate toy for their participation. Families will also get to trial two different types of mobility aid – a powered mobility device and a partial bodyweight support system, which may provide new insights into their child's preferences and abilities.

What is involved?

- **Child-led play:** Children and their families will play with the research team while using a mobility aid or no mobility aid. Children will use two mobility aids: a partial bodyweight support system and a powered wheelchair.
- **In-person Visits:** 3-5 visits at the University of Washington. These visits will be less than 90 minutes. Families will receive $25 for each in-person visit. The research team will pay for parking or public transportation.
- **Interviews and Surveys:** Families will be invited to share their perspective on the use of mobility aids by their child through surveys and interviews.
- **Child-worn sensors:** We will measure children's muscle activity and posture using sensors worn on the child's legs and back. We will measure their position using neon-colored tape on their shirt.

Who can participate?

- Children with Down syndrome between the ages of 12 and 36 months, who are not independently walking, but can sit independently
- One caregiver is required to attend with their child, but all family members – including siblings – are invited to play!

To get started, contact Mia at miahoff@uw.edu