Developmental Trajectories of Impairments, Associated Health Conditions, and Participation of Children with Cerebral Palsy: The ‘On Track’ Study

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BACKGROUND

The On Track study is the next step, following Move & PLAY, in a research program to refine measures and methods to track developmental progress in children with cerebral palsy (CP).

Gross Motor Function Measure: GMFM-66

- Measures change in motor function of children CP

- Gross Motor Function Classification System (GMFCS) and GMFCS E&R

Classifies children with CP into one of five levels

Ontario Motor Growth Curves (OMG curves)

- Combines the GMFM-66 and the OMG to describe average motor development for the 5 groups of children

OBJECTIVES

1. To establish developmental trajectories (i.e., reference percentile curves) for primary and secondary impairments and health conditions by GMFCS levels

2. To explore a system of multivariate classifications incorporating the GMFCS, Manual Ability Classification System (MACS), and the Communication Function Classification System (CFCS)

3. To establish developmental trajectories for participation in family and recreational activities and self care by meaningful classifications

4. To replicate a method for families and therapists to determine whether children within each of the 5 levels of the classification system are developing ‘as expected’, ‘better than expected’, or ‘more poorly than expected’

STUDY DESIGN

- Longitudinal, prospective, observational, cohort study

- Each participant seen 2 times over 12 months; Time 2 visit 12 months after the first data collection point.

MEASURES

Therapist Completed Measures

- Early Clinical Assessment of Balance (ECAB)

- Functional Strength Assessment

- Six-Minute Walk Test

- Spinal Alignment and Range of Motion Measure (SAROMM)

- Classification systems: GMFCS, MACS, CFCS

- Parent/Caregiver Self-Report Measures

- Child Engagement in Daily Life Questionnaire

- Early Activity Scale for Endurance (EASE)

- Health Conditions Questionnaire

- Services Questionnaire

- Classification systems (GMFCS, MACS, CFCS)

- *Consensus between parents and assessor to determine level

- Measures are recorded at Time 1 and 2 Assessments

Description of the measures used:

www.canchild.ca/en/currentresearch/moveplay.asp

EXPECTED OUTCOMES

1. Anticipate current and future strengths and needs of children with CP

2. Understand whether individual children are developing ‘as expected’, ‘better than expected’, or ‘more poorly than expected’

3. Proactively plan efficient services and supports to optimize outcomes using evidence from both the Move & PLAY and On Track studies

ADDITIONAL FUNDING


- 1. Extend data collection from 2 times over 12 months to 5 times over 24 months

- 2. Engage more parents of children with CP in all parts of the study

- 3. Develop longitudinal growth curves (analogous to the Ontario Motor Growth Curves1), in addition to reference percentiles

- 4. Compare service characteristics of children who are developing ‘as expected’, ‘better than expected’, or ‘more poorly than expected’ to understand services associated with optimal outcomes

REFERENCES


3. World Health Organization. Spinal Alignment and Range of Motion Measure (SAROMM)

Context of Measures: Move & Play

- Health Condition: Cerebral Palsy & Associated Conditions

- Body Structure/Function: Balance, Spatiotemporal, Distribution, Quality, Strength, ROM, Endurance

- Activities: GM Function, Self-Care in Daily Life, Family/Community Leisure

- Environmental Factors: Function, Family Expectations, Services, Community Physical Recreation

- Personal Factors: Adaptive Behavior, Playfulness, Enjoyment of Participation

In the Move & PLAY study, we tested models of the relationships between the blue determinants and the red outcomes

In the On Track study we aim to develop reference percentile curves for the measures with an asterisk.

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