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

Doreen Bartlett, Sarah Westcott McCoy, Lisa Chiarello, Robert Palisano, Lynn Jeffries, Alyssa LaForme-Fiss, Jan Willem Gorter, and Steven Hanna

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)2, and the Communication Function Classification System (CFCS)7
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

PROPOSED SAMPLE

- N = 875 children (60% Canada, 40% US), Stratified by GMFCS levels I - V (n = 175 per level)
- Inclusion Criteria:
  - Ages 1.5 – 10 years (i.e. up to the 11th birthday) at the time of recruitment
  - Diagnosis of CP by a physician
  - OR Delay in gross motor development and impairments in: muscle tone, righting and equilibrium reactions, anticipatory postural movements of the head, trunk, or legs during movement, and active range of motion during movements
  - Must speak and understand English or French or Spanish

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 (EASURE)
  - 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/ourresearch/moveplay.asp

CONTEXT OF MEASURES: MOVE & PLAY®

Health Condition
Cerebral Palsy & Associated Conditions*

Body Structure/Function
Balance*, Spasticity, Distribution, Quality, Strength*, ROM*, Endurance*

Activities
GM Function

Participation
Self-Care in Daily Life* Family/Community/Lesure*

Environmental Factors
Family Function
Family Expectations
Services Community Physical Recreation

Personal Factors
Adaptive Behavior Playfulness Enjoyment of Participation

Adapted from the International Classification of Functioning, Disability and Health (ICF)9

REFERENCES