

Considerations for Pediatric Physical Therapy Curriculum Based on the Findings of the Move & PLAY Study

Alyssa LaForme Fiss and the Move & PLAY Study Team, 2014

For more information on the Move & PLAY study, including PowerPoint presentations of the measures and main study results, knowledge translation summaries, and additional references, please refer to the Move & PLAY website.^a

This document may be useful to faculty to frame how to teach pediatric physical therapy clinical decision making for preschool children with CP and may provide a template for how to approach clinical decision making for children with a variety of diagnoses. We have attempted to address the complexity of management of children with CP, but recognize this document is not all encompassing and management principles may change as children age or with new research.

This document begins with the key constructs for curriculum based on the Move & PLAY study. The conceptual model, measurement, and key outcomes of interest from Move & PLAY are then highlighted with ideas of how this content may be useful in academic curriculum.

Key Constructs for Curriculum

1. Cerebral palsy is a complex disorder with complex issues that need to be tracked and followed.
2. The therapist must consider relationships among body functions and structures, activity and participation in the context of the child, the child's personality and his or her physical, social, and attitudinal environment.
3. The neurologic lesion that results in cerebral palsy is static, but the physical condition of children with cerebral palsy may change over time with the development of secondary impairments
4. The therapist must consider factors other than body functions & structures (family ecology, environment, adaptive behavior) that may impact change over time and should measure domains across the International Classification of Functioning, Disability and Health (ICF).¹
5. There is a need for systematic methods to examine children with ongoing assessments to identify change, through the use of efficient and clinically feasible measures in clinical practice.
6. Even at very young ages, children with CP, including children classified as GMFCS Level I, are starting to show development of health issues and secondary impairments. There is a need to intervene early.
7. Services need to be delivered in the context of real world experiences and should consider the child's adaptive behavior and associated health conditions.
8. The therapist must understand the importance of the family as an information source and intervention partner when working with a child.
9. Outcomes are complex and should be framed based on the context of the individual child and family.
10. Curriculum should aim to teach clinical reasoning and evidence-based frameworks to help guide practice.

Conceptual Model from Move & PLAY^{2,3,b}

- Model designed to outline child, family, and service factors that together have a potential effect on outcomes of gross motor abilities, participation in self-care, participation in family and recreational activities, and playfulness of young children with CP.
- This conceptual model may be used as an example of clinical decision making for students, assisting them to consider multiple domains of the ICF when determining their examination and plan of care.

Measurement of Determinants of Future Status

- o Measurement of the multiple domains across the ICF is important for children with CP. There is a need for assessment tools that are clinically feasible, brief, psychometrically sound and efficient to provide a comprehensive examination of children with CP.
- o Move & PLAY helped to determine a subset of assessment tools that may be appropriate and clinically feasible to use with children with CP.^c

- Constructs and Consideration of Measures for Examination of Determinants of Outcomes Across the ICF
 - Associated Health Conditions
 - Health Conditions Questionnaire^{4,d}
 - Body Function & Structure: Primary Impairments
 - Balance: Early Clinical Assessment of Balance^{5, e}
 - Spasticity: Modified Ashworth Scale⁶
 - Quality of Movement: Gross Motor Performance Measure⁷
 - Distribution of Involvement
 - Body Function & Structure: Secondary Impairments
 - Strength: Functional Strength Assessment^f
 - Range of Motion: Spinal Alignment and Range of Motion Measure^{8, g}
 - Endurance: Early Activity Scale for Endurance (parent report)^{9,h}
 - Environmental Factors[†]
 - Family Ecology¹⁰
 - Family Support to Childⁱ
 - Family Expectations of Child^j
 - Family Environment Scale^{†11}
 - Family Support Scale¹²
 - Services
 - Pediatric Medical, Rehabilitation, and Community Service Questionnaire^{13,k}
 - Personal Factors
 - Adaptive Behavior: Early Coping Inventory¹⁴

Outcomes

- For children with CP, common outcomes of interest may include motor function, self-care, participation in home and community activities, and playfulness. The determinants of future status for these outcomes were specifically studied within the Move & PLAY study.^l
- Specific determinants of future status were different across the GMFCS for various outcomes.

Outcome of Interest	Determinants to Measure
Motor Function <ul style="list-style-type: none"> • GMFM-66-B&C^{15, m} 	<ul style="list-style-type: none"> • Primary Impairments (balance, quality of movement, spasticity, distribution of involvement) • Secondary Impairments (strength, ROM, endurance) • Participation in community recreation (Levels I-II) • Adaptive Behavior (Levels III-V)
Self-care <ul style="list-style-type: none"> • Child Engagement in Daily Life¹⁶ 	<ul style="list-style-type: none"> • Motor Function • Health Conditions • Adaptive Behavior • Extent Services Meet Needs (Levels I-II) • Primary Impairments (balance, quality of movement, spasticity, distribution of involvement (Levels III-V)) • Family Ecology (Levels III-V)

[†] Information on the children's physical environment was not gathered for this study; however, this information should be considered in both practice and future research.

[‡] The Family Environment Scale was used in this study to capture information regarding family relationships and interests. While this measure is not generally used in clinical practice, effort should be made to gather this type of information.

Outcome of Interest	Determinants to Measure
Participation in Family & Recreation Activities <ul style="list-style-type: none"> • Child Engagement in Daily Life Measure¹⁶ 	<ul style="list-style-type: none"> • Adaptive Behavior • Family Ecology • Involvement in Community Programs • Motor Function (Levels III-V)
Enjoyment of Participation in Family & Recreation Activities <ul style="list-style-type: none"> • Child Engagement in Daily Life Measure¹⁶ 	<ul style="list-style-type: none"> • Adaptive Behavior • Extent Services Meet Needs (Levels I-II) • Family Ecology (Levels III-V)
Playfulness <ul style="list-style-type: none"> • Test of Playfulness¹⁷ 	<ul style="list-style-type: none"> • Motor Function • Health Conditions (Levels I-II) • Adaptive Behavior (Levels III-V)

Intervention

- The focus of therapy may be different depending on the child's GMFCS level. ^{18,1}
- Intervention should be designed to address all aspects of the ICF as appropriate, should be family-centered, meeting the needs of individual families and children, and should be coordinated across the continuum of care.
- The number of minutes spent in therapy was not an important determinant of future status; outcomes for children with CP are associated with much more than simply the time in therapy. Providing family-centered intervention designed to specifically meet the family's needs is more important.
- A lack of correspondence between therapist and parent report of the focus of intervention for children with CP was noted. Strong communication regarding intervention planning and focus of intervention is needed. ¹⁹
- To support MOTOR FUNCTION: ²⁰
 - Optimize 'body structures and function'
 - Improve balance
 - Prevent secondary impairments
 - Foster adaptive behavior for children with greater motor challenges
 - Encourage and support the child's self-awareness, adaptability, motivation, persistence, and interactions with people in real-life situations
 - Assist families in accessing and collaborating with community programs with their children
- To support SELF-CARE: ²¹
 - Optimize gross motor abilities
 - Enhance balance
 - Prevent secondary impairments
 - Promote health
 - Foster adaptive behavior
 - Support family's role in nurturing their children
 - Address family priorities and needs for their child
- To support PARTICIPATION: ²²
 - Foster adaptive behavior
 - Support family's role in nurturing their children
 - Address family priorities and needs for their child. Assist families in accessing and collaborating with community programs for their children.
 - Optimize gross motor abilities
 - Enhance balance
 - Prevent secondary impairments

- To support PLAYFULNESS:²²
 - Optimize gross motor abilities
 - Enhance balance
 - Prevent secondary impairments
 - Foster adaptive behavior
 - Promote health

Conclusions

- The overall findings of Move & PLAY were not surprising. Therapists are encouraged to design intervention for children with CP that optimize body function and structure and gross motor abilities. Therapist should also recognize the associations of main outcomes with adaptive behavior and health conditions of children with CP. Family functioning and family-centered services are also important.
- Move & PLAY illustrates the complexity of participation in self-care for children with disabilities. There are several additional determinants of change in self-care abilities for children with greater motor challenges. These determinants also need to be considered when designing interventions.
- When examining participation and playfulness, adaptive behavior, health conditions, and supporting families to meet their needs and priorities are most important.

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Links

- a. <http://www.canchild.ca/en/ourresearch/moveplay.asp>
- b. http://canchild.ca/en/ourresearch/resources/move_play_summary_conceptual_model_1.pdf
- c. <http://canchild.ca/en/ourresearch/resources/MeasuresDevelopedintheMovePLAYStudy.pdf>
- d. http://www.canchild.ca/en/ourresearch/resources/move_play_health_conditions_questionnaire_dec2012.pdf
- e. http://www.canchild.ca/en/canchildresources/resources/moveplay_ECAB_scoresheet.pdf
- f. <http://www.canchild.ca/en/ourresearch/resources/MuscleStrength.pdf>
- g. <http://canchild.ca/en/measures/saromm.asp>
- h. http://www.canchild.ca/en/ourresearch/resources/moveplay_early_activity_scale_endurance.pdf
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- k. http://www.canchild.ca/en/measures/resources/move_play_rehabilitation_community_questionnaire.pdf
- l. <http://canchild.ca/en/ourresearch/resources/KeyFindingsMovePLAY.pdf>
- m. http://motorgrowth.canchild.ca/en/GMFM/resources/BC_Score_Sheet.pdf

Acknowledgements:

The Move & PLAY study was funded by the Canadian Institutes of Health Research and the National Institute of Disability and Rehabilitation Research. The research team extends their gratitude to the pediatric rehabilitation sites, therapists, and families who participated in this study.