



Effects of a Novel Intervention on Meal Participation Across Settings In a 10-Year-Old Child with Dyskinetic Cerebral Palsy.

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Background/Objectives

The purpose of this poster is two-fold:

- 1) To demonstrate the effects of a novel intervention on the ability of a child with dyskinetic cerebral palsy (CP) to participate in family meals in home and community settings
- 2) To describe an intervention grounded in the perception-action, dynamic systems and neuronal group selection theories that promotes self-generated postural control

Description

Case Information:

The participant was a 10-year-old boy with dyskinetic CP

- ❖ Classified in level IV on
 - GMFCS (Gross Motor Function Classification System) (Palisano et al, 1997)
 - MACS (Manual Ability Classification System) (Eliasson et al, 2006)
 - CFCS (Communication Function Classification System) (Cooley Hidecker et al, 2011)
 - ❖ Classified in level III on EDACS (Eating & Drinking Ability Classification System) (Sellers et al, 2014)
- Parental concerns:
- ❖ The child demonstrated immature and unsafe feeding behaviors that complicated meals at home.
 - ❖ Family was unable to comfortably eat at a restaurant because of their child's eating behaviors.

Parental goal for the child:

- ❖ To gain independence and improve tidiness of the self-feeding process across settings

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Description

Perception-Action (P-A) Approach Intervention:

Theoretical Foundation				Components	Intervention Specific to the Case
	P-A Theory	DST	TNGS	<ul style="list-style-type: none">❖ Incremental changes in environmental set-up closely linked with manual guidance❖ Specific type of manual guidance<ul style="list-style-type: none">▪ Light touch provides a vector of force directed toward the child’s center of pressure at the support surface▪ Incremental changes in the force vector provide perceptual information to suggest new movement possibilities▪ No resistance provided to the child’s self-initiated movements▪ Errors are allowed❖ Family instruction <p>(Tscharnuter, 2002; Harbourne and Rahlin, 2016)</p>	<ul style="list-style-type: none">❖ Outpatient occupation therapy 1 x week, 45-60 minutes, for a total of 45 sessions, with occasional physical therapy consultations<ul style="list-style-type: none">▪ Task-specific intervention focusing on self-feeding activities the entire session time▪ Targeting self-generated postural control specific to feeding while allowing the child to make movement errors❖ Parent participation at each session❖ Frequent updates of home program developed in collaboration with the parents❖ Activity repetition and intensity ensured by high parental compliance with the home program implementation❖ Self-feeding activity highly salient to the child
Explanation of movement organization	Highlighted the role of multiple perceptual systems	Emphasized the self-organization process	Explained the mechanism of self-organization via the concepts of selection and reentrant signaling		
Role of cognition	Proposed the perception-action-cognition connection	Used the concept of embodiment to explain the perception-action-cognition connection	Used the concept of “adaptive value” (salience) to explain the perception-action-cognition connection		
(Gibson, 1966; Gibson, 1988; Thelen and Smith, 1994; Thelen, 1995; Edelman, 1987, 1993) Abbreviations: P-A, Perception-Action; DST, dynamic systems theory, TNGS, theory of neuronal group selection.					

Outcomes:



Before Intervention	After Intervention
Needed adaptive seating with a pelvic belt and a tray	Is able to sit in a regular chair at the family table or in a restaurant
Fed mostly by adults or self-fed by crushing food with his hands and pushing it into his mouth	Self-feeds a meal with intermittent minimal assistance provided at the elbow; self-feeds finger foods appropriately
Unable to eat without spilling or dropping food	Accesses his plate with minimal spilling or dropping food
Unsafe in handling a fork	Uses the fork safely
Had limited drinking options (a toddler non-spillable sippy cup and a sippy pop-up straw cup)	Has acquired two additional drinking options (a spillable sippy cup and a sip tip straw cup)
Was not wiping face	Self-initiates face wiping
Used unilateral approach to self-feeding	Self-initiates bimanual approach to self-feeding



Significance

- ❖ The P-A Approach intervention was successful in
 - Addressing a participation goal meaningful to the child and his family
 - Reducing the use of adaptive equipment during family meals
- ❖ Parental goal for the child was achieved because of the following factors:
 - *Family-centered* decision-making
 - *Interprofessional collaboration* between the occupational and physical therapists
 - P-A Approach intervention being *task-specific, repetitive and salient* to the child
- ❖ Single-subject or multiple baseline design research is needed to establish the efficacy of this novel intervention in addressing participation in children with dyskinetic CP.