

Motor Intervention for Young Children with Autism Spectrum Disorder (ASD)

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Introduction

Autism spectrum disorder (ASD or autism) is a pervasive developmental disorder characterized by deficits in social skills, communication and repetitive or restricted interests (APA, 1994). Research indicates that young children with autism experience delayed infant motor milestones resulting in deficits of fine and gross motor skills. The purpose of the larger study, in the Children & Youth with Disabilities Lab, is to implement an early intervention for young children with autism using movement-based programming as the primary mode of intervention. Through a randomized control trial of a movement-based program, it is hypothesized that children with autism will experience health-related benefits through improvements in motor skills, social communicative skills and physical activity. As a part of this study a number of baseline assessments are being conducted. The purpose of this URAP project is to explore standardized motor skills and compare them to motor skills seen in a natural setting for young children with autism.

Study Design

Subjects: Preschool children (2-5 yrs) with a suspected diagnosis of ASD. Each child will be randomly assigned to either the control group (only participate in initial/final assessments) or intervention group.



Participant engaging in social activity during initial assessment.

Procedures:

1. Descriptive assessments conducted prior to the intervention
 - Including:
 1. Age
 2. Birth weight
 3. Birth order
 4. Other diagnoses
2. Initial Assessments:
 - Autism Diagnostic Observation Schedule (ADOS)^{1,2}
 - Mullen Scales of Early Learning
 - Differential Abilities Scale 2nd Edition
 - Peabody Developmental Motor Scales 2nd Edition (PDMS-2)⁴
3. Intervention (only for intervention group): 8 Week Duration
 - Two 45 min sessions/week
 - Activities:
 1. scooter boards
 2. balance activities
 3. throwing and catching
 4. fine motor skills
 5. games: Tag, Red Light/ Green Light
 6. Parachute games
4. Final Assessments at two separate times: 8 weeks and 2 months following initial assessment.
 - using the same tests as initial assessments

URAP Personal Responsibilities:

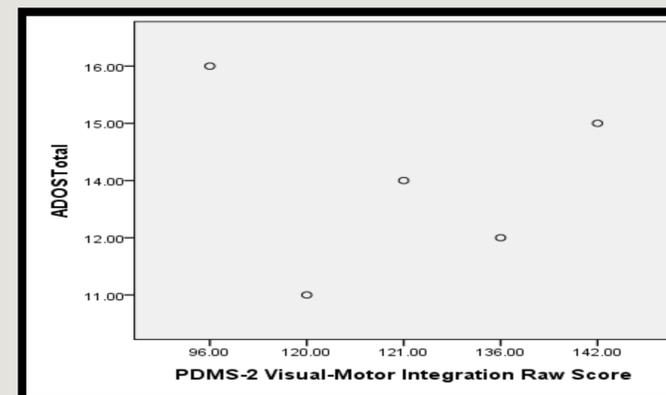
- Film and download assessment and intervention video clips.
- Help plan and set up obstacle courses for participant motor skills development.
- Data input into statistical program for future analysis.

Results

Descriptive characteristics of the participants

n	5
Age	range 44- 59 months, mean 54.4 (6.3)
Gender	M= 5, F=0
Race/ ethnicity	Caucasian=3, American Indian=1, Other=1
PDMS-2 Raw Scores	
Stationary	44.6 (6.1)
Locomotion	141.4 (22.9)
Object Manipulation	30.4 (6.0)
Grasping	42.6 (8.2)
Visual-Motor Integration	123.0 (17.8)

Scatterplot of social communicative skills and motor skills in young children with autism



Participants engaging in motor activities during intervention.

Summary/Conclusion

- Based on our results a weak relationship exists between the social communicative skills and motor skills of young children with autism. However, there is a trend which shows that children with better motor skills have better social communicative skills. It is possible that these results will improve with a larger sample size.
- This project is currently implementing a motor skills based intervention. The research team is hopeful that this intervention will improve motor skills and social communicative skills of the participants. To our knowledge this is the first randomized control trial of a movement-based early intervention for young children with autism.

References

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