Incorporating Movement Activities into Therapy to Comprehensively Treat Preschoolers with ASD

By Kelly Vess, CCC-SLP &

Joseph Evens, OTR/L

Michigan Speech-Language Hearing Association

Virtual Conference

Saturday, August 1st 9:45-11:45AM

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About Vess & Evens

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Kelly Vess, CCC-SLP, has 16 years of experience in preschool age intervention. She researches and develops evidence-based assessment and treatment practices that focus on optimizing therapeutic gains within realistic caseload and time demands.

Kelly Vess is also an off-campus clinical instructor for Wayne State and Eastern Michigan universities. In collaboration with Wayne State University, she develops and directs evidence-based intervention programs for diverse populations of preschoolers in speech, language, and literacy intervention.

Joe Evens is an Occupational Therapist for Grosse Pointe Public School Systems. At Wayne State University, he earned a B.A. in Psychology and Health Sciences. He has experience working with children in a variety of settings including hospitals, clinics, school systems, and homecare settings.

Joe specializes in sensory integration, primitive reflexes, school accommodation, adaptations, feeding techniques, and handwriting. Joe has presented on topics such as *Movement in the Classroom*, *Adaptive Strategies for ADLs*, and *Sensory Strategies for Self-Regulation*. In addition. to presenting to staff, he also has created three sensory rooms for Grosse Pointe Public Schools.

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Financial Disclosure

Kelly Vess & Joseph Evens are full-time employees of the Grosse Pointe Public Schools.

Kelly Vess is author of **Speech Sound Disorders: Comprehensive Evaluation and Treatment for Thieme Publishers** in which she receives royalties. This book contains over 120 best practice clips of assessment and therapy with interactive evaluation and guided practice activities. Digital clips from this book will be showcased here.

Movement activities in this presentation were developed with Wayne State University SLP graduate students Katelyn Adams, Holly Flynn, MaryLyn Liovas, and Torey McNally.

Speech Sound Disorders: Comprehensive Evaluation and Treatment

by Kelly Vess
Thieme Publishers

Release Date: September 2020

This presentation would not be possible without the ongoing, steadfast support of Wayne State University Clinical Director Karen O'Leary & Barnes Early Childhood Program Supervisor Susan Lucchese.

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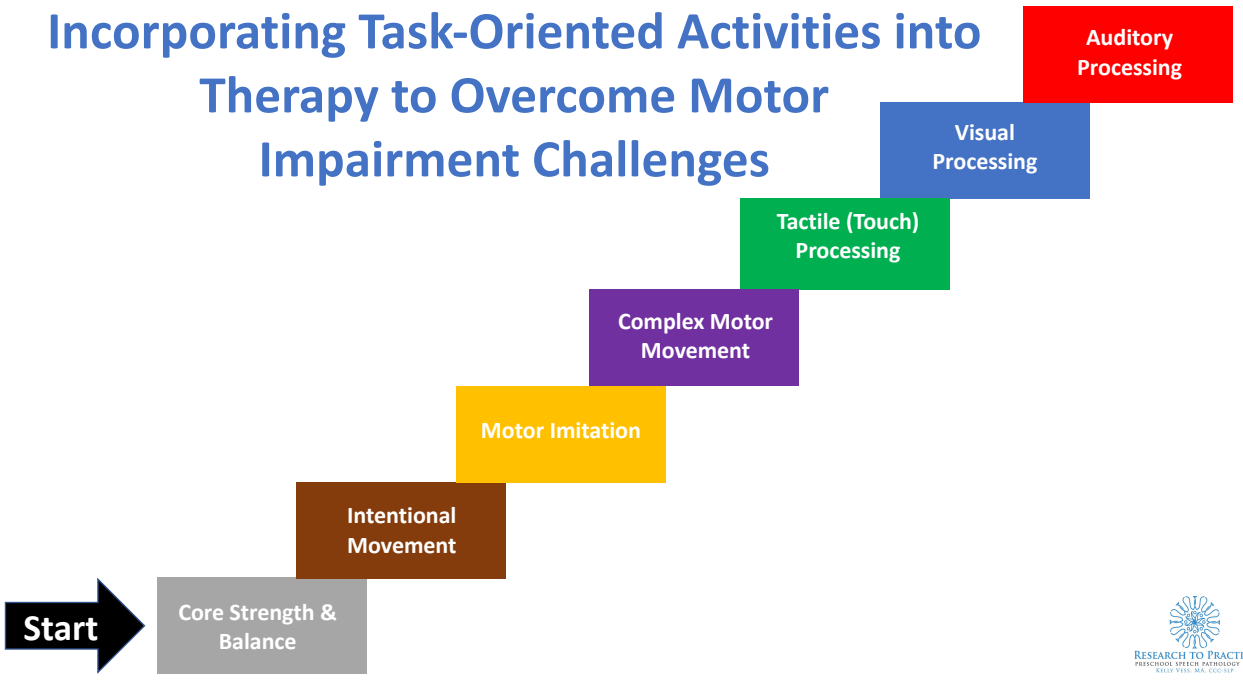
Incorporating Task-Oriented Activities into Therapy to Overcome Motor Impairment Challenges



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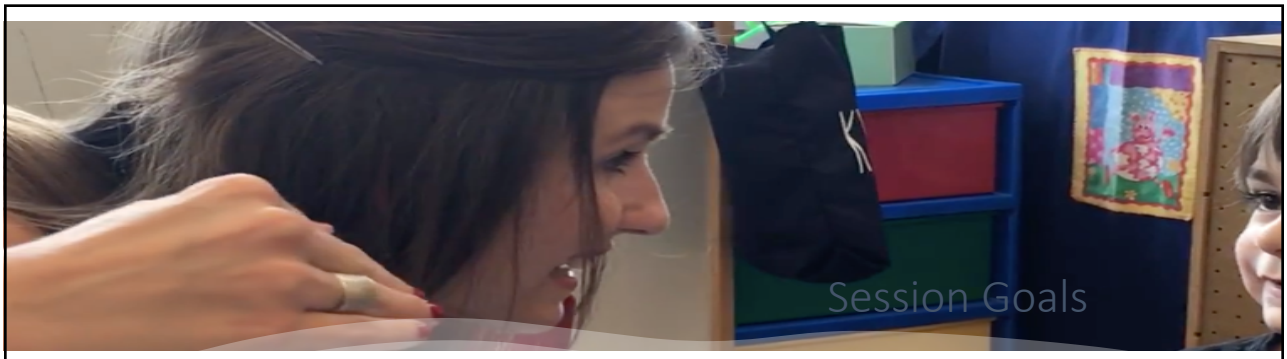

Participants will be able to:

- Discuss the prevalence and pervasive impact of motor impairments for children with Autism Spectrum Disorder.
- Implement a comprehensive, multi-faceted approach focusing on treating the mind, heart, and body of the child with ASD.
- Integrate expertise from an Occupational Therapist to further advance speech-language therapy practices.
- Create and incorporate task-oriented activities for diverse populations of preschoolers.

Session Goals

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Why are we here?

- An estimated 75-80% of children with ASD present with concurrent motor impairment.
- Early motor development is highly prognostic of later expressive language skills.
- Research indicates that children with ASD are no more likely to receive therapy for motor impairment than their neuro-typically developing peers.
- SLP's can make a difference! Research has shown that fundamental motor skills can substantially improve skills through task-oriented activities provided by adults not trained in occupational or physical therapy.

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Treat the Mind, Heart & Body

Mind: Increase attention, linguistic skills, complex cognitive tasks, and executive function by incorporating complex treatment targets across domains.

Heart: Increase mirror neuron activity through focusing on motor imitation, joint attention, and creating high engagement states of joint attention through enthusiasm with a minimal 80% success rate.

Body: Incorporate task-oriented core, gross, and fine motor challenges of increased intentionality and complexity.

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The Mind

Goal: Select Complex Treatment Targets for Optimal Change

1-Pragmatics: Increase duration and quality of joint attention.

2-Syntax: Increase length and complexity of utterances.

3-Semantics: Incorporate tier 2 vocabulary, and a diversity of verbs and vocabulary.

4-Phonology: Use complex 3-element consonant clusters.

5-Literacy: Print reference, phonological awareness activities, visual scanning & sequencing movements.

6-Introduce academic processes concepts (e.g., elements of the story, scientific method).

7-Executive Function: Improve attention through meaningful task-oriented, multiple step activities.

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The Heart
Goal: Increase Mirror Neuron Activity

1-Relationships increase mirror neuronal activity.

2-Motor imitation increases mirror neuronal activity.

3-Verbal imitation increases mirror neuronal activity.

6-Sportscast the *child's* interests to increase joint attention.

7-Respond with heightened emotion to child's behaviors to increase joint attention.

8-Create fun, hands-on activities to engage the child's mind and body.

9-Provide scaffolding where the child is successful 80% of the time.

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The Body
Goal: Incorporate Challenging Task-Oriented Activities to Improve Psychomotor Functioning

Children are assigned an "occupation" to creatively and **independently** use their bodies to solve multi-step, complex gross and fine motor challenges through task-oriented activities.

Apple Picker

Marine Biologist

Painters

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Core Strength & Balance

Children with ASD are more likely to present with…

- Delayed early motor development at 6-12 months
- Poor proprioception, postural control, and balance, resulting in an increase in restricted, repetitive behaviors.
- Postural instability, proprioception, and tone deficits linked to visual processing and fixation difficulties,
- Hypotonia (i.e., low muscle tone) in the trunk, proximal, and distal muscles of the upper limbs (e.g., shoulder, wrists respectively) and lower limbs (e.g., hips and ankles respectively).

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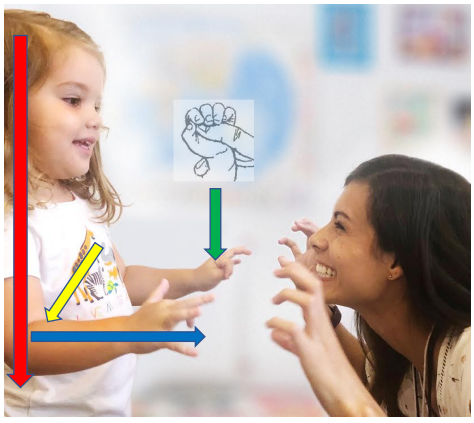
How do motor skills generally develop in children moving from simple to complex?

1. Involuntary → Voluntary (Reflexive to Intentional)
2. Center → Extremities (*Proximodistal*)
3. Gross Motor → Fine Motor
4. Head → Toe *(Cephalocaudal)*



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Video 1. Marine Biologist Ava: Poor Postural Core and Strength

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Video 1. Marine Biologist Ava with Poor Postural Core Strength

Areas Engaged	Variations to Treat the Mind, Heart and Body: An Occupational Therapist's Perspective
Mind: Challenging Skills with Scaffolding	
Heart: Engagement & Motor Imitation	
Body: Task-Oriented, Challenging Motor Skill	

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Intentional Movement

Children with ASD are more likely to present with…

- Longer times to react to stimuli, and to initiate and execute movements.
- Poorer motor skills, which are related to increased restrictive, repetitive behaviors (RRBs).
- Poorer motor skills, which are related to increased impairment across domains in cognition, expressive language, and social skill development.
- Poorer motor skills that correlate to more restrictive, repetitive behaviors (RRBs).

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Video 2. Zoologist Davey: Developing Intentional Movement

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Video 2. Zoologist Davey Developing Intentional Movement

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Motor Imitation

Children with ASD are more likely to present with…

- Poor motor and gestural imitation that directly result in delayed motor development.
- A lack of mirror neuron activity. When children with ASD engage in motor imitation, mirror neuron activity doubles.
- A lack of mirror neuron activity to generate empathy.
- Reduced visual attention to a speaker's eyes and facial expression and increased attention to the mouth.

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Video 3. Scientist Stella: Challenging Motor Imitation

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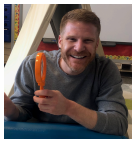
Video 3. Scientist Stella Improving Motor Imitation with Multi-Modal Cueing



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Complex Motor Movement

Children with ASD are more likely to present with…

- Higher levels of postural sway, asymmetry in movements, and poorer coordination across sagittal, transverse, coronal anatomical planes.
- Poorer balance, object manipulation, ball play, and locomotion skills, which directly impact the ability to play with peers.
- Reduced fundamental movement skills and practical living motor skills, which correlate to reduced social skills.

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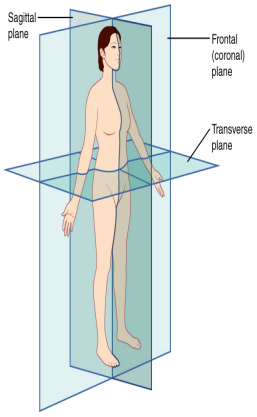
Movements Across Planes: Coronal, Sagittal & Transverse

Plane	Assymetrical Coordinated Movements
Coronal (Frontal) Plane	on hands and knees while reaching up; prone position while drawing on a vertical surface; lying prone on a swiss ball reaching down (gravity assisted) and up (anti-gravity)
Midsagittal Plane	stringing beads, cutting paper, pouring into a container, side shuffle, propelling a scooter, twisting a lid, manipulating small toys, putting toothpaste on a toothbrush, crossing monkey bars, climbing, buttoning, zipping
Transverse Plane	Throwing, swinging, climbing a slide, swinging a bat, walking a balance beam, rolling a ball underhand, riding a bike, wheelbarrow walk on hands



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Video 4. Ida: Challenging Complex Motor Movements

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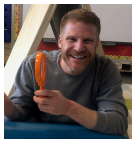
Video 4. Camper Ida challenging Complex Motor Movements



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Tactile Processing

Children with ASD are more likely to have…

- Increased sensitivity to pain and touch. An estimated 70% of children with ASD have tactile difficulties.
- Hypo- or hyper-reactivity to sensory input and unusual sensory interests (added to the DSM-V In 2013, under the ASD core eligibility criteria of "restricted and repetitive behavior").
- Tactile sensory differences that directly link to poor joint attention, poor social competence, anxiety disorders, behavioral challenges, cognitive impairment, sleep disturbances, gastrointestinal issues, and food over-selectivity.

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Video 5. Chef Davey: Challenging Tactile Processing

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Video 5. Chef Davey Challenging Tactile Processing

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Research Review: Visual Processing

Children with ASD are more likely to present with…

- Visual fixation on objects or actions, resulting in difficulty shifting visual attention when others bid for joint attention.
- Increased perception capacity and register of visual stimuli, resulting in sensory overload.
- Greater use of the visual cortex to respond to and process auditory stimuli than neurotypical peers.

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Video 6. World Traveler Liam: Challenging Visual Processing Skills

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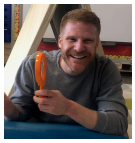
Video 6. World Traveler Liam Improving Visual Processing Skills



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Auditory Processing

Children with ASD are more likely to present with…

- Auditory processing difficulties (estimated 90%) related to social, cognitive, and communication impairments.
- Increase in restrictive, repetitive behaviors, repetitive speech, production of loud sounds, and hitting others in louder preschool classrooms.
- Stronger visual processing skills than auditory processing skills.
- Improved language learning over time with a combination of visual & verbal input.

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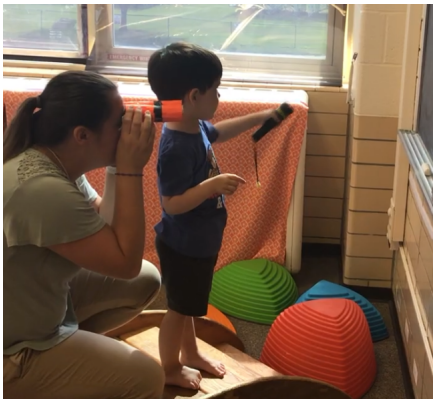
Video 7. Camper Ardo: Challenging Auditory Processing



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Video 7. Ardo Challenging Auditory Processing

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How to Develop a Task-Oriented Activity

Ask the following…	
1-Theme:	
2-Occupation:	
3-Task:	
4-Materials Needed:	
5-Obstacle at Challenge Point:	
6-Cause-Effect Goal:	

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For more information….

1. For further info…
   Kelly Vess at kellyvessslp.com
   Joseph Evens at evensj@gpschools.org
2. For free educationally rich activities…
   Kellyvessslp.com under "Home Activities"
3. For ideas for task-oriented activities…
   Kellyvessslp on instagram
4. For more digital clips…
   Speech Sound Disorders: A Comprehensive Approach to Evaluation and Treatment

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