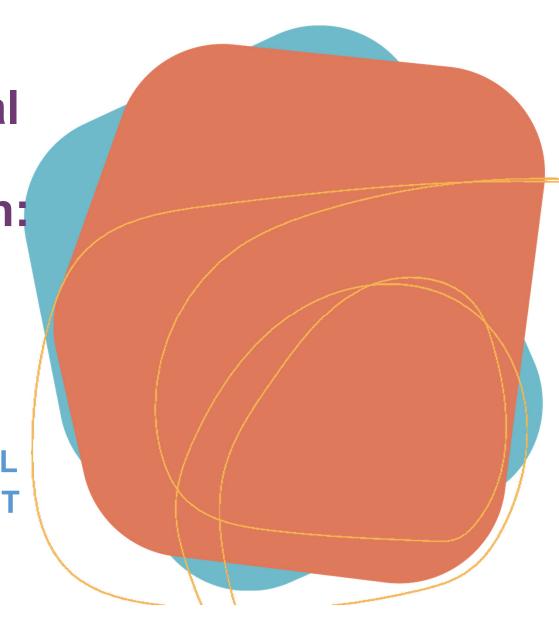
Guiding Professional Reasoning And Embodied Reflection:

Enhancing Trauma Interventions Through Individualised, Child-led, Sensory-Motor Play

Lisa M. Porter, PhD, OTD, OTR/L Breanne E. Kearney, PhD, MSOT Cara Sheekey, MOT



The Role of Play in Healthy Brain Development

Motivational driver: propels healthy neurodevelopment

Dynamic integration: Facilitates the complex interplay between:

- Sensorimotor processing
- Cognitive processing
- Social-emotional processing

Foundation for growth: Creates optimal conditions for neural development

Sensory-Motor Development & Trauma

- Alters brain development in areas responsible for movement planning and sensorimotor processing (sensorimotor network and cerebellum)
- Creates a disconnect between the child and their own body
 - Seeking high intensity input to 'feel something'
 - Difficulty maintaining stability
 - Poor coordination and motor planning
- Creates ripple effects that influence how children interact socially

Sensory input has a direct influence on arousal: Reticular Activating System

Vestibular (movement) and somatosensory (body) input influences activation of Reticular Activating System → Arousal

Arousal meets Affect at level of Midbrain

Sensorimotor experiences with a safe attachment figure is the foundation for relational safety



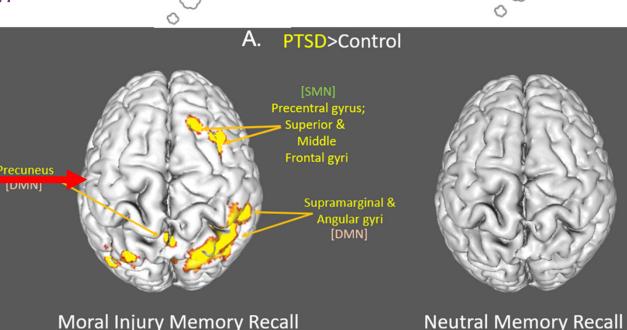
Brain areas processing bodily information are altered in traumatic memory

Sensorimotor Network:

processing somatosensory input, readying to execute motor action





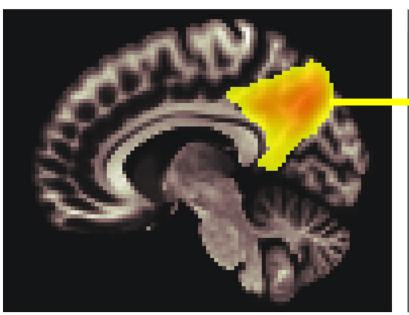


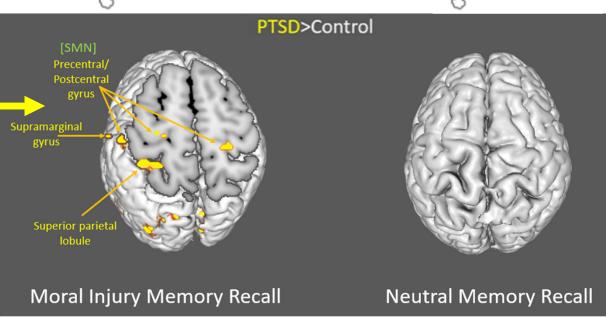
Kearney et al., 2023 Neurolmage: Clinical

Neutral

Memory

Brain areas processing bodily information are altered in traumatic memory





Traumatic

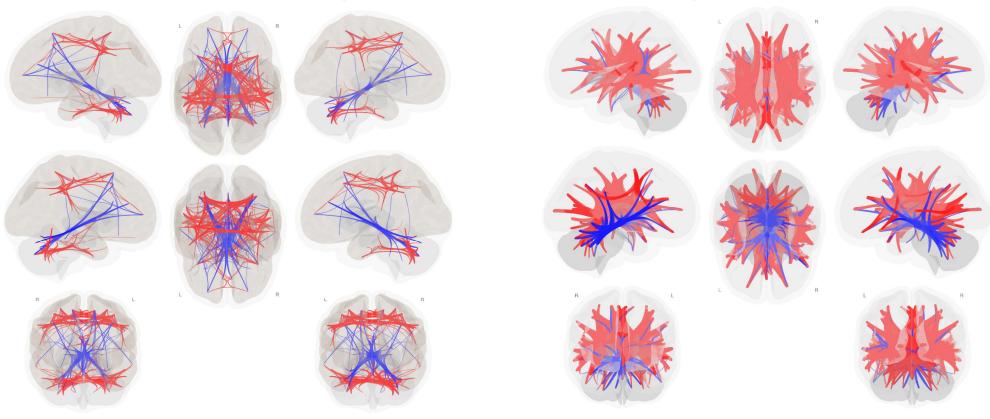
Memory

Kearney et al., 2023 Neurolmage: Clinical

Neutral

Memory

Sensorimotor processing affects Whole Brain function: PTSD during traumatic memory recall



Kearney et al., 2025 Nature Mental Health



Professional Reasoning and Reflection on Observation:

An Organizational

Framework

Need for framework

- While play therapy has long been used for trauma treatment, it often overlooks the contribution of sensorimotor engagement to safety
- Without attention to sensory safety, children often struggle to stay present and connected during therapy
- Implementation gap Limited guidance on how to engage in clinical reasoning and reflection when using play-based approaches
- Practitioners benefit from structured approaches to integrate sensorimotor principles into practice

Professional Reasoning

Identify child's interests, areas of strength, & supports for success

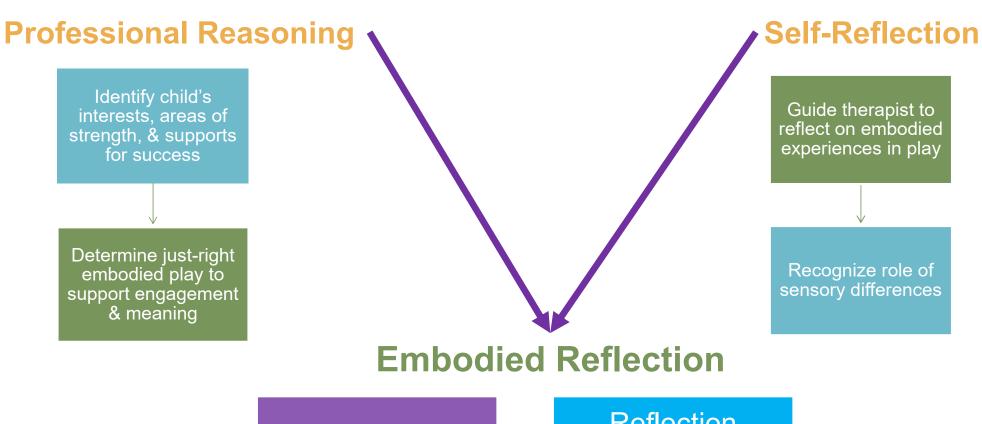
Determine just-right embodied play to support engagement & meaning



Self-Reflection

Guide therapist to reflect on embodied experiences in play

Recognize role of sensory differences





Thoughts & experiences of the whole body

Reflection revealed through action & bodily awareness



Record and Reflection Sheet Name: Date of Birth: Therapist: Parent/Caregiver: Age: Date: **Embodied Play Observations:** Refining - Embodied Symbolic Play Schemes Organizing Sensory Motor - Embodied Representational Play Organizing Sensory Motor - Novel Ideas & Actions Exploring Sensory Motor - Goal Directed Actions Exploring Sensory Motor - Environment Exploring Sensory Motor - Body **Domain Observations:** V **Praxis** Refining Organization & Planning for Unfamiliar Environments Organizing & Planning in Familiar Environment Organizing & Planning Through Visual Space Exploring Environment within Reach Exploring Body/Boundaries of Self Notes: Posture Refining Movement with Sensory Demands Organizing Movement with Anticipation & Rhythmicity Organizing Core Stability with Movement Exploring Rotation Exploring Stability Exploring Relationship with Gravity **Social Emotional** Refining Emotional Understanding Organizing Emotions & Symbolic Meaning Organizing Social Meaning & Sense of Self

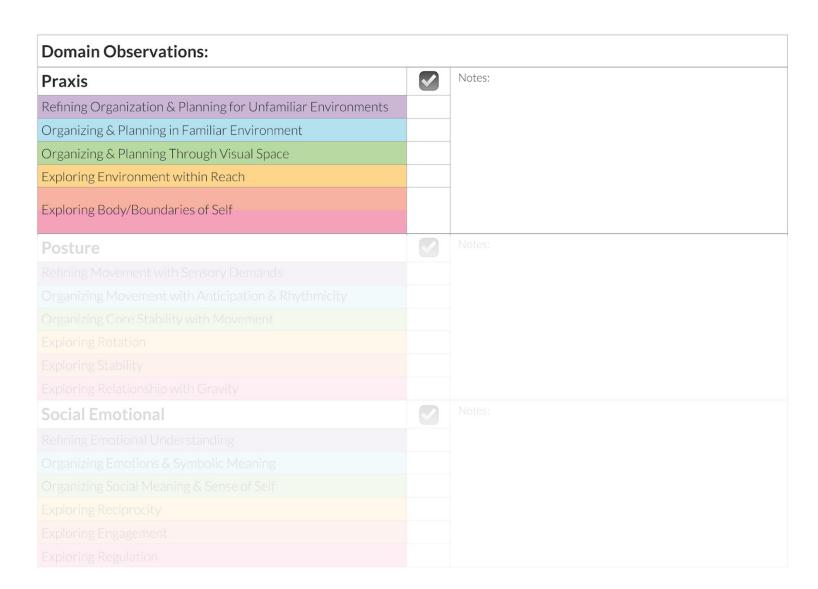
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Exploring Reciprocity Exploring Engagement

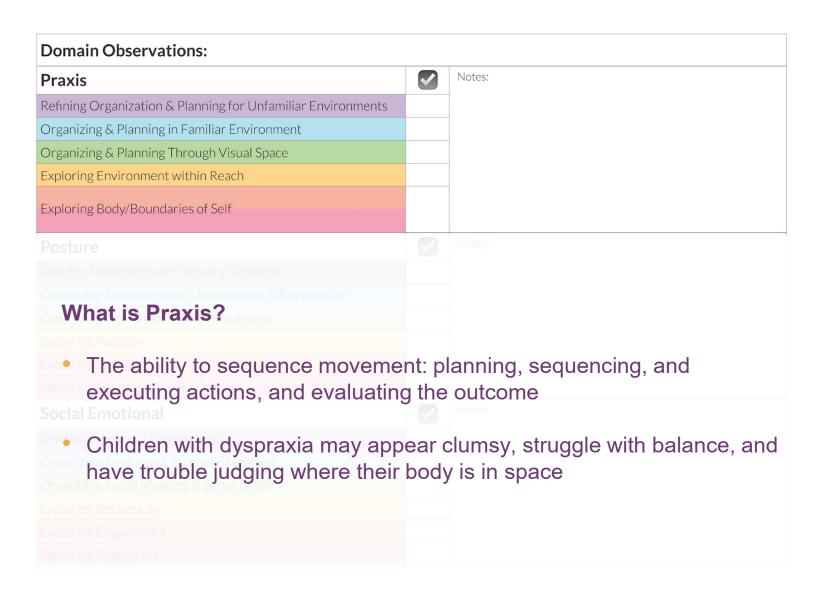


Record and Reflection Sheet

Name:	Date of Birth:			Therapist:
Parent/Caregiver:	Age:			Date:
Embodied Play Observations:		✓	Notes:	
Refining - Embodied Symbolic Play Scheme	S			
Organizing Sensory Motor - Embodied Rep	resentational Play			
Organizing Sensory Motor - Novel Ideas &	Actions			
Exploring Sensory Motor - Goal Directed A	ctions			
Exploring Sensory Motor - Environment				
Exploring Sensory Motor - Body				
Domain Observations:				
Praxis				

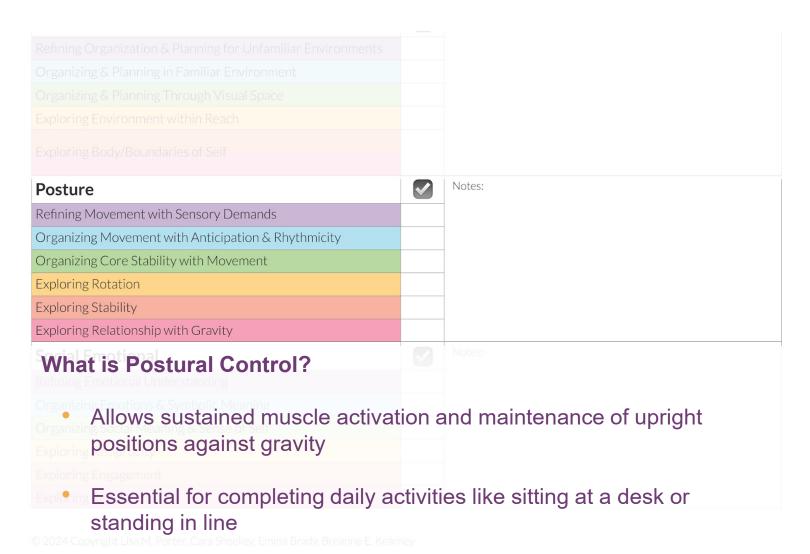


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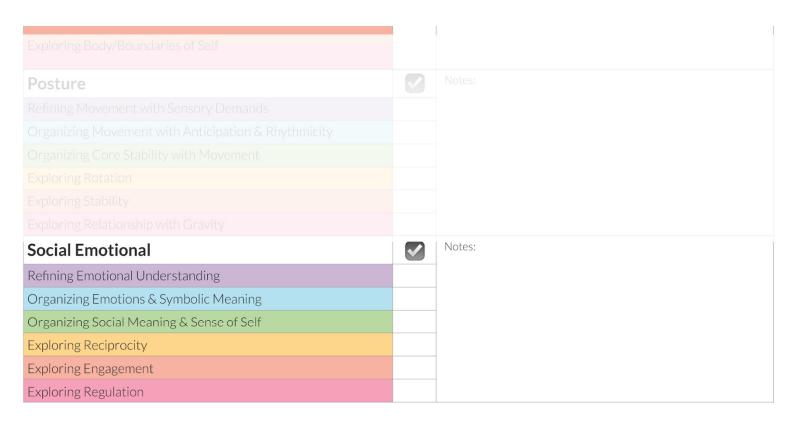


Domain Observations:		
Praxis	~	Notes:
Refining Organization & Planning for Unfamiliar Environments		
Organizing & Planning in Familiar Environment		
Organizing & Planning Through Visual Space		
Exploring Environment within Reach		
Exploring Body/Boundaries of Self		
Posture		Notes:
How Does Trauma Impact Praxis	?	
Childhood trauma disrupts brain for movement planning and contractional		elopment in key areas responsible ore frontal cortex and cerebellum
 This creates a disconnect with the organise movements effectively. the foundational skills needed for 	In tu	rn making it harder to establish

Domain Observations:	
Praxis	
Posture	Notes:
Refining Movement with Sensory Demands	
Organizing Movement with Anticipation & Rhythmicity	
Organizing Core Stability with Movement	
Exploring Rotation	
Exploring Stability	
Exploring Relationship with Gravity	
Social Emotional	Notes:



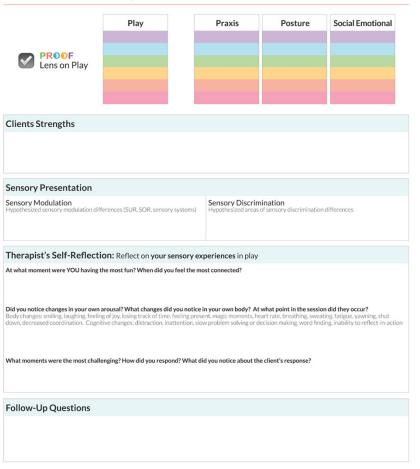
 Challenges in postural control lead to excessive effort being required to maintain upright posture



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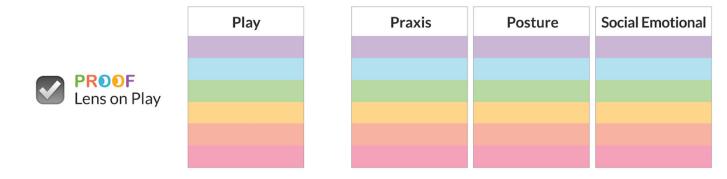
Integration of Observations



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Integration of Observations



Clients Strengths	

Sensory Presentation

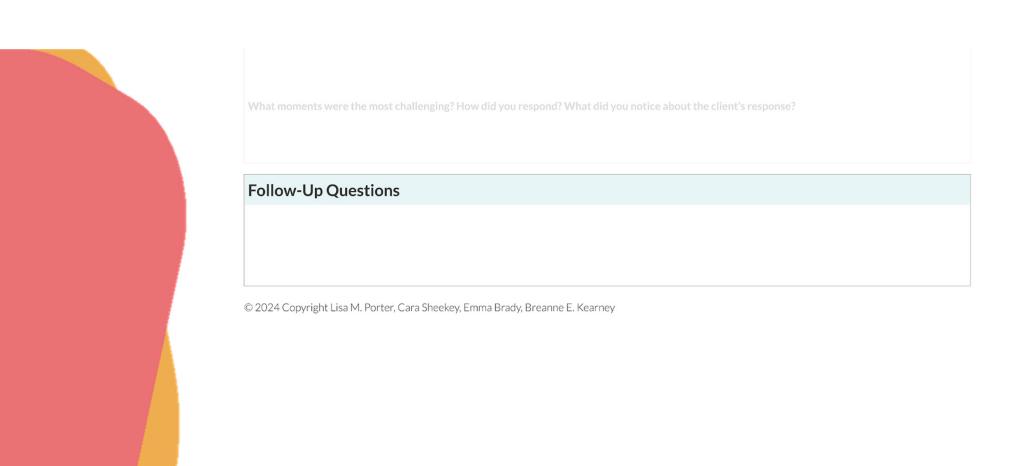
Sensory Modulation

Hypothesized sensory modulation differences (SUR, SOR, sensory systems)

Sensory Discrimination

Hypothesized areas of sensory discrimination differences

Therapist's Self-Reflection: Reflect on your sensory experiences in play At what moment were YOU having the most fun? When did you feel the most connected? Did you notice changes in your own arousal? What changes did you notice in your own body? At what point in the session did they occur? Body changes: smiling, laughing, feeling of joy, losing track of time, feeling present, magic moments, heart rate, breathing, sweating, fatigue, yawning, shut down, decreased coordination. Cognitive changes: distraction, inattention, slow problem solving or decision making, word finding, inability to reflect-in-action What moments were the most challenging? How did you respond? What did you notice about the client's response?







Record and Reflection Sheet

Name: **Kyle** Date of Birth: 23 February, 2014 Therapist: Karina

Parent/Caregiver: 9 years, 2 months Date: April 2023 Age:

Embodied Play Observations:	✓	Notes:
Refining - Embodied Symbolic Play Schemes		Prefers sedentary play. Participating, but
Organizing Sensory Motor - Embodied Representational Play		not actively exploring.
Organizing Sensory Motor - Novel Ideas & Actions		Exploration of body seen at end of session
Exploring Sensory Motor - Goal Directed Actions		on ball.
Exploring Sensory Motor - Environment		
Exploring Sensory Motor - Body	X	



Domain Observations:			
Praxis	✓	Notes:	
Refining Organization & Planning for Unfamiliar Environments			
Organizing & Planning in Familiar Environment		No exploration observed with higher	
Organizing & Planning Through Visual Space		praxis demands of "obstacle course"	
Exploring Environment within Reach		North on so so did in complement the bedre and	
Exploring Body/Boundaries of Self	x	Most engaged in exploring his body and the ball	
Posture	✓	Notes:	
Refining Movement with Sensory Demands		_	
Organizing Movement with Anticipation & Rhythmicity		Using extremities to balance	
Organizing Core Stability with Movement			
Exploring Rotation		Beginning to explore at end of session or	
Exploring Stability		ball	
Exploring Relationship with Gravity	X		
Social Emotional	✓	Notes:	
Refining Emotional Understanding		Limited engagement with complex play	
Organizing Emotions & Symbolic Meaning		demands	
Organizing Social Meaning & Sense of Self		Beginning to see some reciprocity at the	
Exploring Reciprocity			
Exploring Engagement	X	end, when body demands were just righ	
Exploring Regulation			

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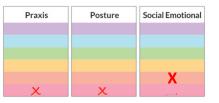




Integration of Observations







Clients Strengths

Kyle is social and appears to enjoy interactions with therapist and family. He joins in therapist-directed play.

Sensory Presentation

Sensory Modulation

Sensory under-responsive -

prop, vestibular, tactile, visual

Sensory Discrimination

Poor somatosensory discrimination

Therapist's Self-Reflection: Reflect on your sensory experiences in play

At what moment were YOU having the most fun? When did you feel the most connected?

- I felt a shift when Kyle was prone on the ball
- I felt more connected and that we were playing together

- I was not connected prior to that and may have also needed the input
Did you notice changes in your own arousal? What changes did you notice in your own body? At what point in the session did they occur?
Body changes: smiling, laughing, feeling of joy, losing track of time, feeling present, magic moments, heart rate, breathing, sweating, fatigue, yawning, shut
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- My arousal was high earlier in the session, I knew it wasn't going well
- I was feeling anxious, having trouble planning in the moment

- When he smiled and laughed on the ball I felt relief; noticed I was less tense What moments were the most challenging? How did you respond? What did you notice about the client's response? - The whole session before the ball was challenging

- I had a plan, but it didn't feel successful
- I could tell the "play" wasn't meaningful to him or to me

Follow-Up Questions

- Did sensory motor play support increased engagement and participation?
- Will Kyle's engagement and participation continue to improve with an emphasis on embodied play?

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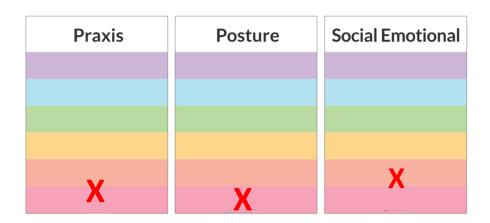


Professional reasoning and Reflection on Observation: an Organizational Framework

Integration of Observations







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Sensory Modulation

Hypothesized sensory modulation differences (SUR, SOR, sensory systems)

Sensory under-responsive prop, vestibular, tactile, visual

Sensory Discrimination

Hypothesized areas of sensory discrimination differences

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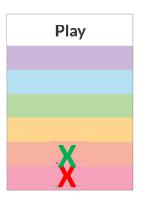
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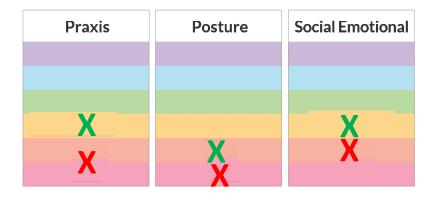
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Integration of Observations







Emphasis on Sensory-motor Play

- Provides somatosensory and vestibular input needed for body awareness
- Supports arousal at the brainstem level and fosters safety and connection
- Foundation for brain development, promoting emotional wellbeing and social engagement

Conclusion

- PROOF provides structured guidance
- Embodied reflection enhances therapeutic connection
- Sensorimotor play serves as a foundation for healing
- Individual differences matter

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