Pediatric Sensory-Integration Protocol

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Project Description & Sites

- Theracare Outpatient Therapy Services (TOTS)
- Creation of sensory-based assessment and protocol based upon Pyramid of Learning
- Implementation of protocol
- Documentation to determine effectiveness
- Provision of resources to parents and OT practitioners to ensure carryover

Mission & Vision Statements

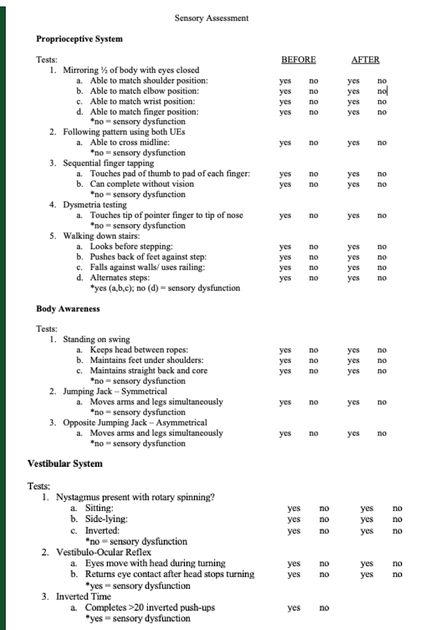
- Mission Statement: To improve outpatient pediatric occupational therapy outcomes through provision of research-based evidence to practicing occupational therapists.
- Vision Statement: To advance pediatric clinical practice skills and improve individual outcomes during pediatric sensory focused therapy sessions, utilizing research-based protocol, generated through collaboration with expert mentor and student.

Literature Review

- Little evidence-based research on effectiveness of sensory interventions
- Most research focuses on ASD diagnoses
- Current sensory assessment require parent or teacher report
- Unique therapy plans required for effective intervention
- Home sensory diets

Deliverables

- Copy of evidence-based pediatric sensory-based protocol.
- Copy of pyramid template used for data collection
- Signature of expert mentor to confirm competence of clinical practice skills with pediatric population.



Sensory Assessment

Proprioceptive System

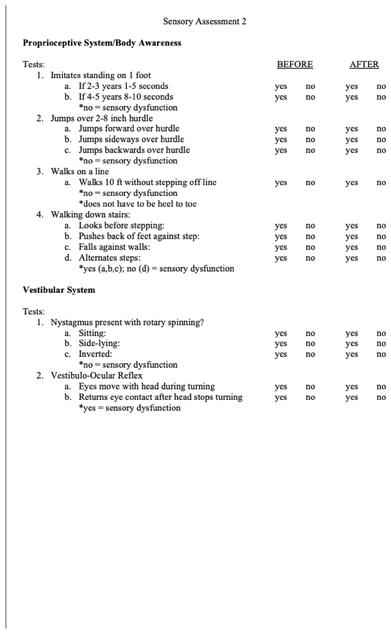
Tests:	BEFORE		AFTER	
1. Mirroring ½ of body with eyes closed				
a. Able to match shoulder position:	yes	no	yes	no
b. Able to match elbow position:	yes	no	yes	no
c. Able to match wrist position:	yes	no	yes	no
d. Able to match finger position:	yes	no	yes	no
*no = sensory dysfunction				
2. Following pattern using both UEs				
a. Able to cross midline:	yes	no	yes	no
*no = sensory dysfunction				
3. Sequential finger tapping				
a. Touches pad of thumb to pad of each finger:	yes	no	yes	no
b. Can complete without vision	yes	no	yes	no
*no = sensory dysfunction				
4. Dysmetria testing				
a. Touches tip of pointer finger to tip of nose	yes	no	yes	no
*no = sensory dysfunction				
5. Walking down stairs:				
a. Looks before stepping:	yes	no	yes	no
b. Pushes back of feet against step:	yes	no	yes	no
c. Falls against walls/ uses railing:	yes	no	yes	no
d. Alternates steps:	yes	no	yes	no
*yes (a,b,c); no (d) = sensory dysfunction				

Body Awareness

Tests:				
1. Standing on swing				
a. Keeps head between ropes:	yes	no	yes	no
b. Maintains feet under shoulders:	yes	no	yes	no
c. Maintains straight back and core	yes	no	yes	no
*no = sensory dysfunction				
2. Jumping Jack – Symmetrical				
a. Moves arms and legs simultaneously	yes	no	yes	no
*no = sensory dysfunction				
3. Opposite Jumping Jack – Asymmetrical				
a. Moves arms and legs simultaneously	yes	no	yes	no
*no = sensory dysfunction				

Vestibular System

Tests:				
1. Nystagmus present with rotary spinning?				
a. Sitting:	yes	no	yes	no
b. Side-lying:	yes	no	yes	no
c. Inverted:	yes	no	yes	no
*no = sensory dysfunction				
2. Vestibulo-Ocular Reflex				
a. Eyes move with head during turning	yes	no	yes	no
b. Returns eye contact after head stops turning	yes	no	yes	no
*yes = sensory dysfunction				
3. Inverted Time				
a. Completes >20 inverted push-ups	yes	no		
*yes = sensory dysfunction				



Sensory Assessment 2

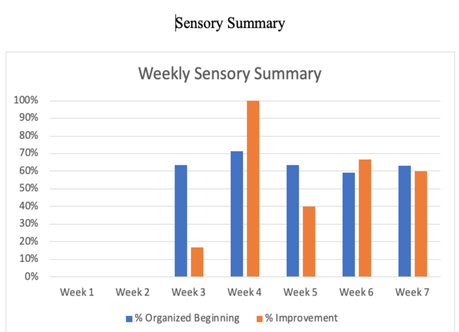
Proprioceptive System/Body Awareness

Tests:	BEFORE		AFTER	
1. Imitates standing on 1 foot				
a. If 2-3 years 1-5 seconds	yes	no	yes	no
b. If 4-5 years 8-10 seconds	yes	no	yes	no
*no = sensory dysfunction				
2. Jumps over 2-8 inch hurdle				
a. Jumps forward over hurdle	yes	no	yes	no
b. Jumps sideways over hurdle	yes	no	yes	no
c. Jumps backwards over hurdle	yes	no	yes	no
*no = sensory dysfunction				
3. Walks on a line				
a. Walks 10 ft without stepping off line	yes	no	yes	no
*no = sensory dysfunction				
*does not have to be heel to toe				
4. Walking down stairs:				
a. Looks before stepping:	yes	no	yes	no
b. Pushes back of feet against step:	yes	no	yes	no
c. Falls against walls:	yes	no	yes	no
d. Alternates steps:	yes	no	yes	no
*yes (a,b,c); no (d) = sensory dysfunction				

Vestibular System

Tests:				
1. Nystagmus present with rotary spinning?				
a. Sitting:	yes	no	yes	no
b. Side-lying:	yes	no	yes	no
c. Inverted:	yes	no	yes	no
*no = sensory dysfunction				
2. Vestibulo-Ocular Reflex				
a. Eyes move with head during turning	yes	no	yes	no
b. Returns eye contact after head stops turning	yes	no	yes	no
*yes = sensory dysfunction				

Project Completion and Outcomes



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
% Organized Beginning	-	-	0.63636364	0.71428571	0.63636364	0.59090909	0.63157895
% Improvement	-	-	0.16666667	1	0.4	0.66666667	0.6

- Completion of 2 assessments utilized to determine sensory regulation
- Individualized sensory summaries to educate parents
- Individualized home sensory diets to increase carryover at home
- Dissemination to staff

Future Implications for OT

- Provision of therapist-led sensory based assessment
- Increased evidence towards effectiveness of sensory-based assessments
- Evidence towards sensory dysfunction in population of children without formal ASD diagnoses
- Increased reimbursement towards sensory-based treatment interventions

KEY REFERENCES
*Full reference list and image reference list available upon request