

SENSORY INTEGRATION TECHNIQUES FOR SPEECH LANGUAGE PATHOLOGISTS: AN INTRODUCTION

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I. INTRODUCTION

II. CLINICAL REASONING

1. What filter might you look through first (most obvious to your background and orientation) to describe a child performance.
 - First impressions
 - Play
 - Respiration
 - Attention
 - Communication
 - Syntax
 - Pragmatics
 - Semantics
 - Normative Data
 - Phonological Development
 - Augmentative Communication
 - Sign Language
 - Auditory Processing
 - Symbolic Representation
 - Experienced Based Therapy
 - Age/Maturity
 - Behavior/Temperament
 - Developmental Levels
 - Oral Motor Skills
 - Feeding
 - Cognition
 - Learning Styles
 - Functional Skills
 - Family Dynamic/Culture
 - Medical Diagnosis
 - Medications
 - Applied Behavioral Analysis
 - Child directed vs. Adult directed
 - Craniosacral/myofacial
 - Sensory Defensiveness
 - Arousal/Modulation
 - Suck/Swallow/Breathe
 - Biomechanical
 - Postural Integrity
 - Ocular motor
 - Self Regulation
 - CNS/Biochemistry/Neurochemistry
 - Sensory Systems
 - Sensory Processing
 - Sensory Integration
 - Sensory Motor Integration
 - Motor Skills
 - Visual Motor/Fine Motor
 - Visual Perception
 - ADL's
 - Ethnicity/socioeconomic
 - Environment/Context
 - Occupational Performance
 - Expectations
 - Past experiences/Opportunities
 - Allergies
 - Social Emotional
2. What does the child already know how to do to support what performance.
3. Under what circumstances (what environment, performance requirements, stressors, etc.) Does the child do _____? (Fill in the blank with one of her/his strategies.)
4. For what (your perceived) purpose does the child do _____?
5. What will it take to support the child to do what he wants to do the way he wants to do it. (Consider environments, criteria for success according to the child, stressors, current level of alertness.)

I. INTRODUCTION TO SENSORY INTEGRATION

A. **Sensory Integration**: the ability of the nervous system to organize sensory input for meaningful adaptive responses (Ayres).

- Sensory Integration is a process (from SI theory) and the ability to:
 - receive sensory stimuli
 - attribute meaning to that stimuli or information
 - integrate that information with other information
 - integrate this data with prior sensory motor experience
 - produce an efficient adaptive response
 - register the adaptive or motor response for future use

* "treatment facilitates sensory integration by supporting different parts of the nervous system to work together for more effective interaction with the environment and self satisfaction." (as defined by Dr. A. Jean Ayres)

B. **Arousal, Attention and Self Regulation**

1. Arousal-is the state of the nervous system, describing how alert one feels. (as defined by Williams and Shellenberger, 96)
2. Self Regulation-is the ability to attain, maintain, and change arousal appropriately for a task or situation. (as defined by Williams and Shellenberger, 96)

C. **Sensory Systems:**

- **Tactile/Somatosensory:** Body sense. Largest sense organ.
- **Vestibular:** responds to body movement through space and change in head position. It coordinates movement of eyes, head, and body in relation to space.

- all other types of sensation are processed in reference to this vestibular information so when the vestibular system is not functioning in an accurate way the interpretation of other senses will be inaccurate.

- **Proprioception- sense of body position:** gives awareness of body position. Perception of sensation from muscles and joints.

- Heavy work- type of proprioception that includes anything that works the muscles against gravity.

- **Auditory:**
- **Vision:**
- **Smell:**
- **Gustatory:**

D. **Sensory Defensiveness:** a constellation of symptoms that are the result of defensive reactions to non-noxious stimuli across one or more modalities (Wilbarger & Wilbarger, 1991).

E. **Social Emotional Disorders Related to Sensory Defensiveness:**
a pattern of learned behaviors that create habits and interaction styles that is protective and defensive in nature. These stress and anxiety reactions can continue after the primary symptoms of sensory defensiveness are no longer present. (Wilbarger & Wilbarger, 1992)

F. **Sensory Diet:**

A term coined by occupational therapist Patricia Wilbarger to describe the brain's need for sensorimotor input, and if we provide the brain with needed input we will feel more alert and attentive.

- * Sensory defensiveness can affect any or all of the sensory systems
- * Often leads to an avoidance of interaction with environment.

Effects on communication/attention/learning	Directed Activities
<p><u>Sensory Defensiveness</u></p> <ul style="list-style-type: none"> • Decreased exploration/interaction • Distracted/bothered by various types of Sensory input (over or under-reactive) • Oral hyper/hypo sensitivity • Poor respiratory rate/rhythm/depth • Continuous state of hyper vigilance • Difficulty changing level of attention • Poor peer interaction • Withdrawn • Resistance to participating in activities • Attending <p>* Refer to <u>Sensory Defensiveness in Children</u> Aged 2-12 (Wilbarger & Wilbarger)</p> <p><u>Arousal/Attention</u></p> <ul style="list-style-type: none"> • Ability to sustain and shift attention • Modulation of arousal for various activities • Attention to communication partner • Ability to interpret non-verbal cues. • Attention to task • Maintain posture appropriate to activity • Interaction with environment • Topic maintenance • Rate/Rhythm/volume/frequency of speech • Turn taking <p>* Refer to <u>How Does Your Engine Run?</u> (Williams & Shellenberger)</p> <ul style="list-style-type: none"> • Refer to <u>Take Five!</u> (Williams & Shellenberger) 	<p><u>Sensory Defensiveness</u></p> <ul style="list-style-type: none"> • Therapressure Protocol • Sensory Diet • Pressure and proprioception • Oral input • Climbing/jumping/crashing • Bite and tug • Resistive suck • Pulling • Heavy work • Hide outs • Music <p><u>Arousal/Attention</u></p> <ul style="list-style-type: none"> • Pressure and proprioception • Bite/blow/suck/chew • Resistive suck (water bottle) • Sitting/bouncing on therapy ball • Movement • Heavy work • Music/rhythm • Alert Program (How Does Your Engine Run) • Hand fidgets • Seating alternatives • Breathe work • Music

Respiration/Posture

- Respiratory support for speech
- Decreased MLU
- Final consonant deletion/stopping
- Increased rate
- Pitch/rhythm
- Difficulty with continuants
- Attention
- Written language
- Need for continuous movement
- Increased or decreased arousal

* Refer to M.O.R.E. (Frick, Oetter, & Richter)

Movement/Vestibular

- Exploration
- Turn taking
- Processing
- Attention/modulation
- Increased or decreased arousal
- Sequence in time and space
- Non-verbal
- Posture
- Muscle tone
- Orientation
- Concepts
- Stable visual field
- Stable auditory field

* Refer to Sensory Integration and the Child (Ayres)

Respiration/Posture

- Blow toys
- Kazoo conversation
- Belly ball
- Hand placement
- Growling and crawling like animals
- Bubble jar
- Blow darts
- Vestibular
- Seating adjustments
- Music

Movement/Vestibular

- Front to back
- Side to side
- Rotation
- Upside down
- Swings
- Slides
- Scooter boards
- Rolling on floor or over therapy ball
- Obstacle course
- Play Ground equipment
- Trampoline
- Change of head position

***The information in this handout represents only a small sample of interventions. All activities should be directed and monitored by qualified therapists. Activities should be modified on an ongoing basis to best facilitate each child's progress.

***The information printed in this handout was modified from the following list of references:

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