

Handout for the Therapro webinar **Are Sensory Sensitivities Interfering with Learning? Strategies for Evaluation and Treatment** presented by Karen Moore, OTR/L - May 11, 2021

**the SENSORY CONNECTION program**

## Are Sensory Sensitivities Interfering with Learning? Strategies for Evaluation and Treatment

Karen Moore, OTR/L  
Therapro Webinar  
May 11, 2021 7:00PM - 8:30PM

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### Let's Be Sensitive to Sensory Issues



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### Meltdowns and Catastrophe


Could Hypersensitivities or hyperarousal be the root cause here?

**Feeling Overwhelmed**

**Demands are Too High**


**Sensory Overload**

**Feeling scared**




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### Be a Sleuth



#### Start considering sensory possibilities

- ▶ When behaviors seem in explainable
- ▶ When an outburst "comes out of the blue"
- ▶ When tried and true interventions don't seem to work



**Examples:**  
Youth with DD and Glade Plug-In  
Young fellow with Autism and reaction to cleaning chemicals

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### Behaviors Associated with Over-Responsivity

- ▶ Aggression or impulsivity when overwhelmed by sensory stimulation
- ▶ Unsociable, avoids group activities, trouble with relationships
- ▶ Uncomfortable in lines or crowds
- ▶ Excessively cautious, afraid to try new things
- ▶ Resistant to change, difficulties with transitions
- ▶ Irritable, fussy, moody
- ▶ Difficulty in noisy hectic places like cafeteria



Miller, 2014


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### Look Beyond the Behavior - and Ask Why!

Tina Champagne

People seek what they need - adaptively or maladaptively

(Dunn, 1997; Hanschu, 1995)




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### Sensory Processing Patterns

- ▶ **Hyposensitive**
  - Misses sensory cues
  - Under-responsive to stimuli
  - Can be sensory seeking
- ▶ **Hypersensitive**
  - Can be overwhelmed by sensory input
  - Withdraws from stimuli
  - Avoids
  - Tries to control situations and environments
  - hypervigilant

Our focus for today! 

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### Dunn's Model

Hyposensitive "Bystander" Misses sensory cues	Hyposensitive "Seeker" Sensory seeking
Hypersensitive "Sensor" Manages input / can be overwhelmed	Hypersensitive "Avoider" Withdraws, avoids, controls

Dunn, 2014

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### Sensitivities Are on a Continuum


Hypo-sensitivities ————— Hypersensitivities ————— Defensiveness

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### SENSORY DEFENSIVENESS

Abnormal reactions to things most people wouldn't notice.


- Hypersensitive - low threshold
- Abnormal experiences of sensory experiences
- Increased startle reflex
- Avoidance and control issues
- Some input can feel painful
- Self-injurious behaviors common



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### Case Story Misinterpretation of Behavior

- ▶ 41 year old man on Specialized Treatment Unit at WSH
- ▶ Diagnosis of Pervasive Developmental Disorder
- ▶ Has history of violent explosions of emotions
- ▶ Making progress - doing much better over all
- ▶ Starts refusing showers and changing his clothes
- ▶ Huge struggle begins with staff who see it as a behavioral issue
- ▶ OT is called in.



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### Sensory Defensiveness Treatment

- ▶ 2010 Literature Review determined that treatment of sensory defensiveness delivered positive results but further extensive research is needed. (Abernethy, 2010)
- ▶ 2012 Systematic review of the effectiveness of the Wilbarger protocol with children determined that there is emerging evidence of the protocol in modulating cortisol levels, improving behavior and increasing social and school participation. However, the lack of high quality evidence does not support or refute the use of this intervention with children. (Weeks, Bosthoff & Stewart, 2012)
- ▶ Clients still benefit from understanding their abnormal reactions and benefit from well tolerated enriching strong sensory input provided on a regular basis. Beanbag tapping has been shown to be very helpful. Strategies can be identified and practiced to help cope with aversive and dysregulating sensory input. (Moore, 2005 SCP Handbook p. 119)

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## Is it Sensory or Is it Trauma or Both?

- ▶ The incidence of trauma in children is surprisingly high
- ▶ The incidence of trauma in children with disabilities is extremely high
- ▶ The national average of child abuse and neglect victims in 2015 was 683,000, or 9.2 victims per 1,000 children.
- ▶ Each year, the number of youth requiring hospital treatment for physical assault-related injuries would fill every seat in 9 stadiums.
- ▶ 1 in 4 high school students was in at least 1 physical fight.
- ▶ 1 in 5 high school students was bullied at school; 1 in 6 experienced cyberbullying.
- ▶ 19% of injured and 12% of physically ill youth have post-traumatic stress disorder.
- ▶ More than half of U.S. families have been affected by some type of disaster (54%).

SAMSHA (Substance Abuse and Mental Health Services) 2020  
<https://www.samhsa.gov/child-trauma/understanding-child-trauma>

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## Trauma and Neglect

### People who have experienced trauma and neglect

- ▶ Feel frightened and unsafe
- ▶ Feel out of control of choices and emotions
- ▶ Primitive responses prevail
- ▶ Stuck in a "fight or flight" or freeze mode which are ineffective, dangerous and take a terrible physiological toll
- ▶ Sensory system makes faulty adjustments causing ongoing perceptual abnormalities and sometimes hypersensitivities and impaired responses to sensory input.
- ▶ Unable to self-soothe
- ▶ Sometimes resort to maladaptive behaviors



Sensory issues and defensiveness seen with trauma has a different pathology as SPD. Hypersensitivities and triggers are more closely related to trauma events. (Bialer and Miller, 2011)

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## Hypersensitivities can occur across all sensory domains

- ▶ Auditory
- ▶ Visual
- ▶ Smell
- ▶ Gustatory (taste & oral motor)
- ▶ Touch (mostly light touch)
- ▶ Movement (proprioception and vestibular systems)
- ▶ Interoceptive (internal "felt sense")

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## Auditory Domain

- ▶ Hands over ears
- ▶ Difficulty working with background noise
- ▶ Fearful of certain sounds (dogs barking, vacuuming, hairdryer)
- ▶ Dislikes theaters and concerts



### Auditory Strategies



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## Visual Domain

- ▶ Prefers low light
- ▶ Squints or gets headaches
- ▶ Likes to wear caps with visors or sunglasses to protect eyes from light
- ▶ Disturbed by fast moving images (riding in car)
- ▶ Avoids or threatened by eye contact
- ▶ Reacts strongly to flickering lights



### Visual Strategies



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## Olfactory Domain

- ▶ Bothered by smells others would ignore
- ▶ Bothered by perfumes and soaps and scented candles
- ▶ Upset by chemical smells or plug-in air fresheners
- ▶ Complains the cafeteria smells bad
- ▶ Sensitive to body odors



Make a scented spray: 20 drops essential oil, ½ bottle witch hazel, ½ distilled water

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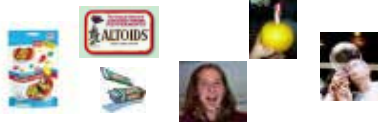
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**Taste and Oral Motor Domain**

- ▶ Gags on textured foods
- ▶ Avoids certain tastes
- ▶ Dislikes brushing teeth or going to dentist



**Taste and Oral Motor Strategies**



**Activity Idea**  
 Drink cold water through a straw with slow, small repetitive sucks and swallows.

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**Tactile Domain**



- ▶ Reacts to someone touching them - may strike out
- ▶ Dislikes having hair combed or cut
- ▶ Dislikes showers
- ▶ Avoids going barefoot
- ▶ Irritated by certain clothing or tags in shirts
- ▶ Dislikes "messy" and textures on hands
- ▶ Strongly prefers hugs, very ticklish
- ▶ Dislikes being in line
- ▶ Dislikes crowds



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**Tactile - Deep Pressure Strategies**



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**Movement Domain**

- ▶ Anxious or distressed when feet are not on the ground
- ▶ Avoids climbing or jumping
- ▶ Fearful of stairs, escalators, elevators
- ▶ Avoids swings and slides
- ▶ Anxious when pushed or moved by someone



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**Movement and Vestibular Strategies**



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**Interoceptive Domain**

- ▶ Feels "stress" or worry as body aches or pain
- ▶ Frequent headaches, muscle pain
- ▶ Often in nurses office with vague discomforts
- ▶ Overly aware of sensations in alimentary tract (nausea, hunger, fullness, thirst)



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## Interoception

- ▶ Our ability to notice internal conditions and sensations of the body and to give meaning to them.
- ▶ The eighth sensory system
- ▶ Answers *How do you feel?*

### How do You Feel?

**When you are angry - where do you feel it?**  
 How would someone else know that you are angry? What would they see?  
 What goes on the body when you are really angry?  
 On a scale of 1 - 10 how bad is it?

Craig, A.D. (2015). *How do you feel? An interoceptive moment with your neurobiological self.* Princeton, NJ: Princeton University Press

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## Explosive Betty

- ▶ Betty doesn't recognize it when he gets angry.
- ▶ Before she knows it he just explodes
- ▶ She can't contain it because he doesn't know it is starting and it is always too late.
- ▶ Bad things happen, Betty hurts herself and others. People tell her she has to learn to stop - to control herself but no one tells her how to begin.



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## Helping Betty



- ▶ Betty says she has a tiger in her stomach
- ▶ She starts to recognize when the tiger is coming
- ▶ She goes to her teacher and makes a growling sound
- ▶ Her teacher talks to her softly, takes her aside.
- ▶ Teacher asks do you feel the tiger in your tummy? How angry is he?
- ▶ They hum together sometimes or toss a Koosh or Betty does chair pushups or smells her special scent box.
- ▶ After a bit the teacher asks her again "how upset is the tiger."
- ▶ When the tiger calm down Betty goes back to class.

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## Formal Sensory Assessment for Children



Designed to promote self-evaluation of behavioral responses to everyday sensory experiences .

Profiles the effect of sensory processing on functional performance at home, school and community.

Compares scores to norms


Family of assessments - one manual

- ❖ Infant Sensory Profile
- ❖ Toddler Sensory Profile
- ❖ Child Sensory Profile 3- 14 86 items
- ❖ Short Sensory Profile 3-14 34 items
- ❖ School Companion Sensory Profile 3-14 44 items



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- ▶ Focuses on every day activities (non-intrusive)
- ▶ Has a strong theoretical base (based on Dunn's Model of Sensory Processing 1997 and research by Dunn, Brown and others)
- ▶ Considers: Sensory systems, behavioral issues, sensory processing problems, and school factors
- ▶ Includes intervention strategies

Dunn, 2014

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### Sensory Responsiveness

<b>Low Registration</b> Passive response - high threshold Misses sensory cues Spacey, clumsy Under responsive or slow to respond Can focus in distracting environments Flexible, comfortable in wide range of environments	<b>Sensation Seeking</b> Actively counteracts high threshold Enjoys rich environments Creates sensation Easily bored Trouble in low stimulation environments
<b>Sensory Sensitivity</b> Passive response - low threshold Easily responds to sensory stimuli Notices things others don't Highly aware of environment Distractible Manages input - can be overwhelmed	<b>Sensation Avoiding</b> Actively counteracts a low threshold Withdraws, avoids, controls Uses ritual and routine Overwhelmed by sensory rich environments Creates own structure and support

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## Informal Tools for Identifying Sensory Hypersensitivities

### Detecting Bothersome Input



- ▶ Imagining Activity
- ▶ Looks at various environments and activities throughout the day
- ▶ It helps determine times or activities that might be problematic.

Imagine you are waking up, getting dressed and having breakfast.  
Any problems?

Imagine you are on your way to school or taking the bus. Any problems?

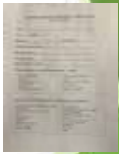
Imagine your classroom, what do you like and dislike. Any problems?

★ See Handout p. 3-4

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### Sensory History Screening School Version

- ▶ The things I want to know!
- ▶ Developed to brainstorm sensory related behaviors, preferences, and proclivities in school age children
- ▶ Important info includes living situation, medical history and characteristics associated with sensory problems
- ▶ Asks questions about areas of strength and problem areas in these domains: Hygiene and Grooming, Nutrition, Relationships, Socialization, Mobility, School, and Leisure/Hobbies/Exercise



★ See Handouts p. 5-8

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### Sensitivities Discovery Worksheet

#### SCP Curriculum for Self-Regulation

- ▶ Purpose: to identify bothersome sensory input
- ▶ Useful in group or individual treatment
- ▶ Factors for: vision, hearing, smell, taste/oral motor, touch, moving/balance, and spaces

★ See Handouts p. 9

**Example: Vision**  
 Directions: Circle any that bother you. Mark with M for mild or S for severe  
 Bright lights Dim lights  
 Flashing lights Flickering lights  
 Darkness Strobes Flat light  
 Fast moving images Clutter  
 Riding in a car (looking out window)

Follow up with *Sensory Sensitivities - What Can We Do?* worksheet to identify helpful strategies.

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## What Bothers You Game

- ▶ **Description:** Game consists of small cards with a possible sensory trigger on it. Examples are noisy places, flickering lights, stairs, loud music, certain smells.
- ▶ **Objectives:** To raise awareness of sensory triggers. To identify personal triggers. To problem solve for ways to handle this bothersome sensory input.
- ▶ **Directions:** Pass out one or two of the *What Bothers You?* game cards to each participant. The first person reads a card and asks if anyone in the group has trouble with this type of sensory input. If it is something that is causing someone in the group difficulty, the *Sensory Sensitivities - What Can We Do?* poster is consulted. The card holder and then the person with the problem suggest possible solutions.



★ See Handouts p. 10-15

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## Sensory Sensitivities What Can We Do?

- ▶ Eliminate it
- ▶ Avoid it
- ▶ Get used to it - slowly
- ▶ Work around it
- ▶ Use a sensory tool
- ▶ Change the time
- ▶ Prepare yourself
- ▶ Relax after
- ▶ Tell someone - ask for help

Ask for Help!!!



★ See Handouts p. 16

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## Overcoming Sensory Issues

- ▶ Don't want to support escape behaviors
- ▶ Use positive reinforcers
- ▶ Praise and reward use of strategies
- ▶ Encourage use of tools
- ▶ Model good behavior - real time
- ▶ Wean behavior in small increments
- ▶ Expect set-backs
- ▶ Allow reasonable accommodations (earplugs)
- ▶ Make aware of upcoming challenges



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## Tried and True Intervention Strategies

Used at the STAR Center (Sensory Therapies and Research) Denver

- Calmness is Catchy** - make sure you (the therapist) are calm and well regulated
- Minimize arousal**
- ▶ Think "slo-low" activities - give time to adjust
  - ▶ Help reach a balanced state with massage, deep pressure touch, vibration, heavy lap pad
  - ▶ Use "heavy work" - strong proprioceptive input is calming and organizing. Try helper tasks - carrying heavy objects, lifting, pulling, squeezing, vacuuming.
- Use predictability**
- ▶ Surprises make things worse
  - ▶ Give plenty of warnings
  - ▶ Give a schedule - detailed if necessary

Adapted from *No Longer a Secret: Unique Common Sense Strategies for Children with Sensory or Motor Challenges*, Bialer and Miller (2011)

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## Tried and True Continued...

### Co-create repertoire of tools and strategies

- ▶ Consider a backpack (weight is good)
- ▶ Develop a sensory kit of child selected tools
- ▶ Try deep pressure tools/strategies (put arms in jacket and then slide back of jacket over chair, neoprene pressure belt, shooter sleeves, heavy lap pad)
- ▶ Teach and practice use of tools in simulated and real environments

### Use rewards to help shape and reinforce use of strategies

- ▶ Make charts to "celebrate" independent use of strategies
- ▶ Rewards can include special time with parents or ice-cream outing



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## Tried and True Continued.....

### Plan for overstimulating events or activities

- ▶ Get there early and leave before or after crowd
  - ▶ Use slow exposure to expected sensations
  - ▶ Incremental exposure better than avoidance
  - ▶ Use a watch or timer and agree to go for limited amount of time - increase slowly
  - ▶ Teach coping skills for a variety of environments
- Use games for distraction**
- ▶ Play I Spy or Bingo when waiting in lines
  - ▶ Make up games for doctor's offices or stressful places

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## Making "Time-In" Space

- ▶ Give child a "get-away" place
- ▶ Use a timer to limit time
- ▶ Ideas: pup tents, big cardboard boxes, cloth over table
- ▶ Start with cues to suggest child take a break, work towards child using the space independently when needed
- ▶ Example of Chauncy Hall "chill out room"



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## Chill Room Chauncy Hall

Recipe for a Self-help Space

Take an empty room next to the classroom  
Add a rug, a beanbag chair and a video rocker  
Add a few simple sensory tools  
Allow kids to use it when needed to chill out



Voilà! You have a simple "sensory room"

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## Comfort Spaces at Home

- ▶ Work with family
- ▶ Use *Comfort Space Plan* worksheets
- ▶ Find a location
- ▶ Make suggestions for items person seems to enjoy
- ▶ Decide how the space will be used
- ▶ 10 minutes morning, afternoon & evening
- ▶ before or after work
- ▶ before or after appointment or stressful event
- ▶ before bed



Participants in Andersson et al (2020) study used the strategy of a "safe place" often a bedroom where they could withdraw from sensory input and re-group; this strategy was used in acute situations but also for resting and pre-venting reacting to distress.


Moore, K. (2008). *The sensory connection self-regulation workbook*. Framingham, MA: Therapro.

★ See Handouts p. 17-18

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## Beanbag Tapping

- ▶ Provides "health touch"
- ▶ Gives intense input to the body - helps give body awareness
- ▶ People sit up, make eye contact, become more engaged and interactive
- ▶ Can be helpful for people struggling with self-injury




★ Handout p. 21

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## Teach Breathing Strategies Tools you have Within You

- ▶ Deep Breathing  
★ See Handout p. 19
- ▶ "Voo" Breathing  
★ See Handout p. 20



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## "Voo" Breathing

1. Sit in a comfortable quiet place with your feet on the floor.
2. Slowly inhale a full breath. (Approximately 4 seconds) On the out breath say "Voo" as you slowly exhale (Approximately 8 seconds). Say it loud enough that you feel the vibration in your body. Sustain the sound throughout the whole exhalation.
3. Pause, wait for the next breath to come in on its own. If you like repeat several times.
4. Pause again and notice your body. Notice any parts that feel more enlivened.

Peter Levine, PhD, founder of Somatic Experiencing, describes a powerful strategy called "Voo Breathing" to help in times of distress.

Toning with this type of sound will open, expand, and vibrate the organs in the belly and stimulate the vagus nerve, calming an overactive nervous system or activating/balancing a shutdown nervous system.

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### Working with Hypersensitivities

- ▶ Consider sensory possibilities
- ▶ Sensitivities are on a continuum
- ▶ Sensory defensiveness is the extreme
- ▶ Is trauma or neglect a factor?
- ▶ Sensitivities are seen across all sensory domains
- ▶ Formal Assessment: Sensory Profile 2
- ▶ Informal Assessments can be helpful
- ▶ Treatment strategies must be chosen with the child and family
- ▶ Practice strategies in real life
- ▶ Provide worksheets and directions for follow-through

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Don't Forget to "Live Sensationally!"

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