



# Sensory Processing

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# OBJECTIVES

Senses

Terminology

Sensory Processing

Evaluation

Case studies / Treatment

Family Resources

# Sensory System (there are 8!)





## 3 lesser known senses

**Proprioception** - the ability to perceive and make sense of changes in body position

**Vestibular** - the ability to perceive and make sense of changes in head position.

**Interoception** - perception of sensations from inside the body  
*organ function- heartbeat, respiration, satiety, ANS activity related to emotions*



# Various aspects of sensory stimuli

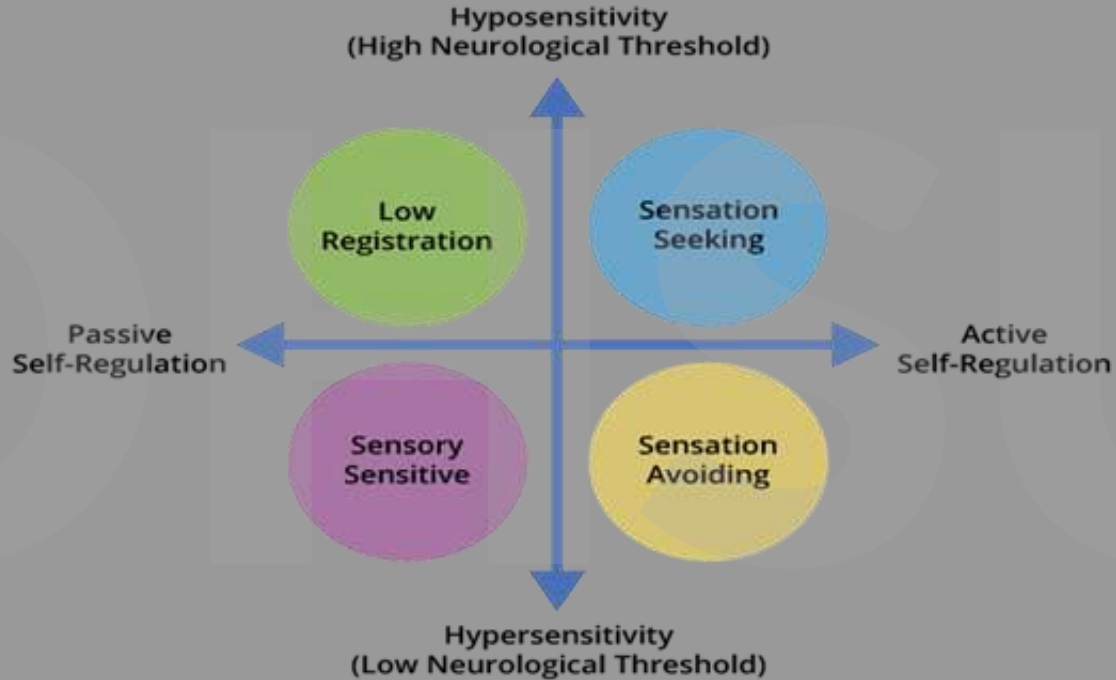
**Processing** = detect & regulate

**Modulation** = threshold level; rate of recovery

**Integration** = interpret sensory information appropriately

**Behavioral Responses - 4 A's** arousal, attention, affect, action

# Sensory Processing



Sensory processing pattern	Common characteristics
<p><b>Low registration</b> Does not actively seek out experiences to meet sensory needs</p>	<ul style="list-style-type: none"><li>■ Shows little interest in surroundings</li><li>■ Rarely participates, especially when there is a lot of activity</li><li>■ Requires extra motivation</li></ul>
<p><b>Sensory sensitivity</b> Does not actively change environment; reaction to overstimulation might not be immediate</p>	<ul style="list-style-type: none"><li>■ Is easily startled by noises, visual stimulation, touch, movement</li><li>■ Protests about things like a tag on a shirt, trying new foods, loud noises</li><li>■ Is easily distracted by the environment, even minor changes</li></ul>
<p><b>Sensation seeking</b> Engages in behaviors to meet high neurological threshold</p>	<ul style="list-style-type: none"><li>■ Fidgets a great deal</li><li>■ Is active and excitable</li><li>■ Seeks out sensory experiences: visual, auditory, tactile, and vestibular stimulation</li></ul>
<p><b>Sensation avoiding</b> Engages in behaviors to avoid overstimulation due to low neurological threshold</p>	<ul style="list-style-type: none"><li>■ Is very sensitive to stimuli</li><li>■ Clings to routines; has difficulty with transitions and changes</li><li>■ Has difficulty engaging in novel experiences</li></ul>

# Sensory dysfunction

What makes it dysfunctional?

*Interference with daily*

*occupations:*

*play*

*self-care*

*learning*

*social interactions*

*community outings*

*emotional regulation*



# Evaluation of sensory processing

Sensory Profile - questionnaire

Infant, 7m-35m; 3y-14y; Adolescent and Adult

Sensory Processing Measure (SPM™)

5-12years & SPM-P 2-5 years

Sensory Integration and Praxis Test (SIPT)

4-8 y.o.; visual, tactile, kinesthetic, and motor tasks





# Tommy - *Sensory Avoider*

Age 3, dx with ASD at age 2

## **Sensory Profile**

*sensory sensitivities: gravitational insecurity*

*sensory avoidances: tactile, oral, auditory, temperature*

*sensory seeking: movement*

*low registration: proprioception*

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**Interferes with: transitions, hygiene, feeding, play, social participation,  
learning, emotional regulation**



# Treatment strategies for Tommy

A sensory diet that includes:

*Messy play*

*Ark Z-vibe*

*Wilbarger brushing protocol*

*Movement-based play*

*Heavy work*

Prescribed for every 2 hours



# Wilbarger Brushing Technique DPPT and OTT

Some of the benefits of the DPPT may include:

*transition between various daily activities*

*attention*

*tactile defensiveness*

*central nervous system < peripheral nervous system*

*enhanced movement coordination, functional communication,  
sensory modulation, and hence, self-regulation*



# Sensory Diet - Patricia Wilbarger, OTR/L

Plan/routine of specific sensory activities

Individualized for the child's needs

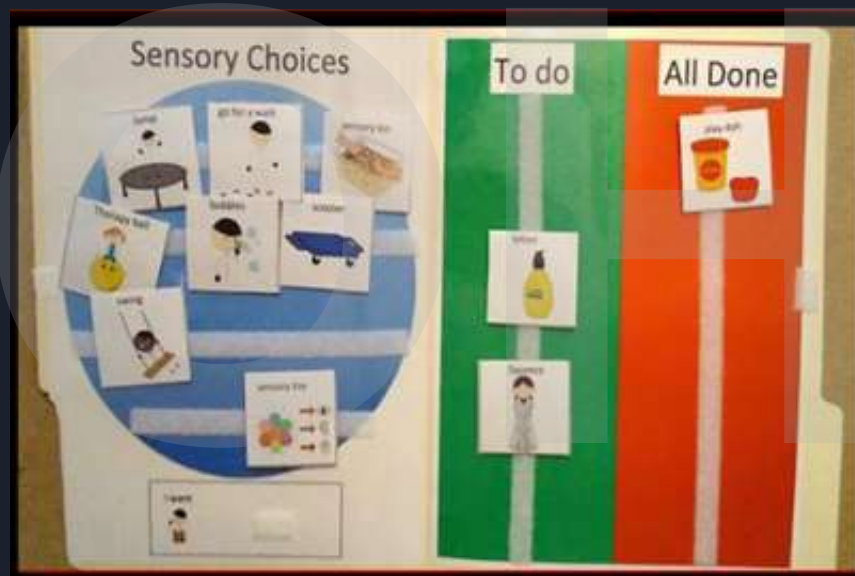
Based around family routine and means

Sensory strategies are based on the activity, time of day, and arousal level

Ex: The grocery store is a very challenging environment. He often becomes dysregulated and tantrums. Tommy benefits from heavy work and deep pressure prior to going to the store.

*- Mom will offer joint compressions and he pushes his toy lawn mower around the house for 5-15 min prior to leaving. Mom reports he often asks for his Z-vibe in the car on the way.*

# Sensory Diet Tools



<p>jump</p>	<p>bear crawl</p>	<p>crab walk</p>	<p>go for a walk</p>
<p>scooter</p>	<p>sensory bin</p>	<p>water play</p>	<p>shaving cream</p>
<p>therapy ball</p>	<p>bubbles</p>	<p>swing</p>	<p>lotion</p>
<p>tickles</p>	<p>play dough</p>	<p>sensory toy</p>	<p>listen to music</p>
<p>squeeze</p>	<p>blanket</p>	<p>weighted vest</p>	<p>bean bag</p>



# Brady - *Low Registration*

Age 7, dx with autism at age 6

## **Sensory Profile:**

Sensitivities - *auditory, oral*

Seeking - *tactile, movement, deep pressure*

Low registration - *visual, movement, body positioning, high pain tolerance*

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**Interferes with: school participation, hygiene, meal times, social participation, emotional regulation**



# Treatment strategies for Brady

Zones of Regulation

*Blue, Green, Yellow, Red*

Positive self-talk and affirmations

Heavy work and big movements (trampoline)




Body sock and compression vest

Partner with MH supports

# The Zones of Regulation (Kuypers, 2011)

The ZONES of Regulation® Reproducible E: The Zones of Regulation Visual

## The ZONES of Regulation®

			
<b>BLUE ZONE</b> Sad Sick Tired Bored Moving Slowly	<b>GREEN ZONE</b> Happy Calm Feeling Okay Focused Ready to Learn	<b>YELLOW ZONE</b> Frustrated Worried Silly/Wiggly Excited Loss of Some Control	<b>RED ZONE</b> Mad/Angry Terrified Yelling/Hitting Elated Out of Control

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# The Zones of Regulation

The ZONES of Regulation® Reproducible W

## Size of the Problem

Remember the size of your reaction has to match the size of the problem!

How big do others see the problem?

How big should your reaction be?

Level	Color	Problem Size	Reaction Size
1	Green	Little Problem	Small
2	Light Green	Little Problem	Small
3	Yellow	Medium Problem	Medium
4	Orange	Big Problem	Big
5	Red	Huge Problem	Very Big

Visual adapted by Leah Kuppert, Dana Britton and Jil Karna for The Zones of Regulation® from the original work of Wender's Think Social® (2008), pages 44-45, [www.socialthinking.com](http://www.socialthinking.com), and Ramon and Corie's The Incredible 5-Point Scale (2008), [www.teachwithaheart.com](http://www.teachwithaheart.com)

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The ZONES of Regulation® Reproducible X

## Inner Coach

Inner coaches help us use positive self-talk to give us the courage and strength to get through stressful situations.

Difficult times I may need my inner coach are:

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My inner coach reminds me to use strategies to keep myself calm.

To help me get to the Green Zone, my inner coach reminds me to:

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My inner coach also helps to keep positive thoughts in my head so I can be successful.

My inner coach might say to me:

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# Olivia - *Sensory Seeker*

Age 3, dx with ASD at age 3

## **Sensory Profile:**

*sensory sensitivities: busy environments*

*sensory avoidances: oral, auditory, tactile*

*sensory seeking: movement, proprioception, oral,  
auditory, tactile*

*low registration: pain/temperature, interoception*

**Interferes with: transitions, hygiene, feeding, play, toileting,  
learning, emotional regulation**



# Treatment strategies for Olivia

## Feeding strategies

Tactile

*oral massage, messy play*

Heavy work

*pulling, pushing, weightbearing,*

Visual cues

*timers, schedules*

Proprioception

*weighted lap pad, chair with a high  
back and feet stabilized*



**Resources for Families**

# Family Resources

- ★ "The Out of Sync Child" and "The Out of Sync Child Has Fun" sequel by Carol Stock-Kranowitz, M.A.
- ★ "The Sensory Child Gets Organized" by Carolyn Dalglish
- ★ "Self Regulation Interventions and Strategies" by Teresa Garland
- ★ "Raising a Sensory Smart Child" by Lindsey Biel and Nancy Peske
- ★ "Sensational Kids: Hope and Help for Children with Sensory Processing Disorder" by Lucy Jane Miller
- ★ "Building Bridges Through Sensory Integration" by Ellen Yack, Paula Aquila, and Shirley Sutton
- ★ "The Explosive Child" by Ross Greene
- ★ "Engaging Autism" by Stanley Greenspan and Serena Wieder



# Family Resources

[www.funandfunction.com](http://www.funandfunction.com)

[www.sensorysmarts.com](http://www.sensorysmarts.com)

[www.spdfoundation.net](http://www.spdfoundation.net)

[www.spdstar.org/](http://www.spdstar.org/)





THANK  
YOU!

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QUESTIONS?



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