



Sensory - The Home and School Connection

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Introduction

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What is Sensory Integration?

Sensory integration refers to how people use the information provided from all the sensations coming from both *within the body* and *the external environment*.

Our senses work together to give us a reliable picture of the world and our place in it...Who you are, where you are, and what is happening around you.

Key Sensory Terms:

- **Sensory Processing:** This is how the brain takes in sensory input. Sensory processing is a basic and foundational function of the nervous system.
- **Self-Regulation:** The ability to self-regulate is constant and is how we maintain a functional state of alertness throughout the day. It is responsible for transitions between sleep and awake, impacts mood, behavior, attention, and emotions. Requires adequate amounts of sensory input to regulate throughout the day.
- **Sensory Input:** anything perceived by your senses
- **Deep Pressure Input:** the most tolerated form of tactile input and tends to be the most regulating, calming, organizing, and soothing for the nervous system.

For most of us, sensory integration happens without thought or effort

Our brain uses information about sights, smells, sounds, tastes and movement in an organized way.

This helps you understand what is happening around you so you can respond to everyday situations in a “typical” manner.



The Five Senses

1. **Visual** - the information we receive through our eyes
2. **Olfactory** - the ability to sense smell
3. **Auditory** - the information we receive through sounds
4. **Gustatory** - sensory information received through taste
5. **Tactile** - the sensory messages received through our skin

The 3 Hidden Senses - The Most Important

1. Proprioception
2. Vestibular
3. Interoception

Proprioception System

- Body Awareness/Position
- Information from inside the body - especially muscles, joints, ligaments - that tells us where our body parts are and how they are moving.
- Information about body position travels through the spinal cord and into parts of the brain that are not conscious. Because of this, you are seldom aware of where your body parts are - unless you actively think about them.

Function of the Proprioception System

- Coordination
- Awareness of where your body is
- Motor planning

Vestibular System

- Senses movement of the head, or head and body together, through changes in receptors in the inner ear.
- Works with the proprioceptive and visual systems to give us information about changes in movement and body position, as well as our orientation to the earth through its' ability to sense gravitational pull.

Function of the Vestibular System

- Balance
- Coordination of eye and head movements

Interoception System

- Senses from within the Body
- Receptors within our body that gather information and send it to the brain where the brain helps us to make sense of the message and enables us to feel hunger, fullness, itch, pain, body temperatures, nausea, need to use the restroom, tickle, physical exertion.

Function of the Interoception System

- Self regulation
- Emotions
- Self awareness
- Problem solving
- Intuition
- Flexibility of thought
- Social understanding
- Perspective taking

How we respond to sensory input

Hyper (Over) Response: when we take in TOO much sensory input around us and therefore cannot focus on a given task.

Typical Response: when our brain takes in the sensory input, organizes it and we are able to function in a typical way

Hypo (Under) Response: when we do not take in enough input around us and are not aware of things going on around us

SHUT DOWN

(looks a lot like low arousal kids)

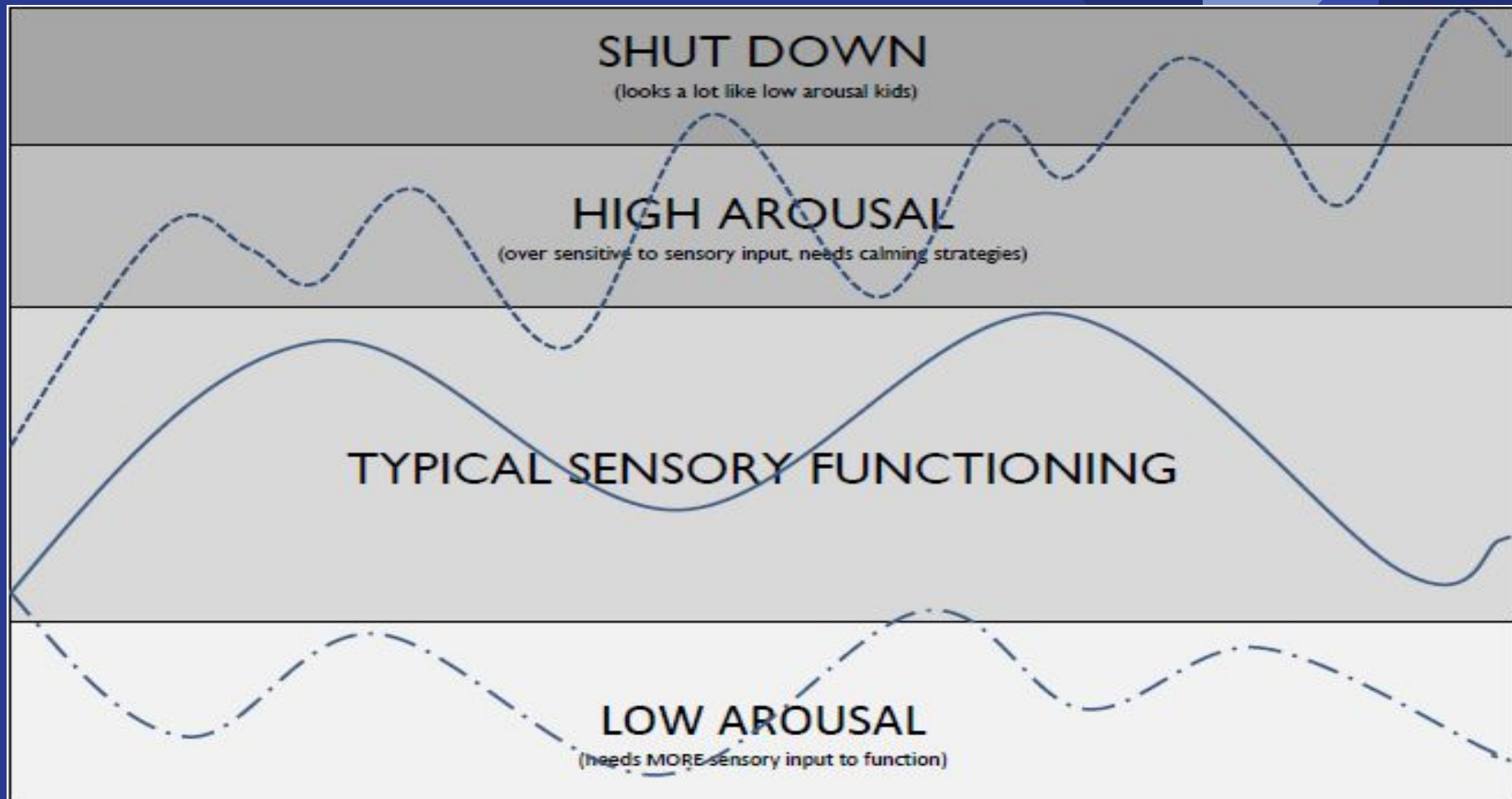
HIGH AROUSAL

(over sensitive to sensory input, needs calming strategies)

TYPICAL SENSORY FUNCTIONING

LOW AROUSAL

(needs MORE sensory input to function)



Statistic

A 2009 study found that 1 in every 6 children has sensory issues that make it hard to learn and function in school. While sensory processing issues are often seen in children with autism, they can also be found in those with ADHD, OCD, other developmental delays, or with no other diagnosis at all.

- Child Mind Institute, childmind.org

Sensory Processing Disorder

- **Self Regulation** starts at birth but the nervous system does not mature enough to manage one's own **sensory regulation** until age 8
- It is a **PROBLEM** when sensory sensitivities interfere with daily life.
- This is a central nervous system response: increased heart rate, stomach ache, muscle tension
- You can't just tell someone to stop...it is **REAL**.



Sensory Overload: Parent Edition

I can't take a call when all I hear is my kids arguing in the background

I'm having a hard time focusing with all of the simultaneous sounds

Everyone wants to be physically close to me and I just need a bit of space

I can't unsee the mess in my home

What's that smell? I can't find the source of it and it's driving me up the wall

Does that TV have to be so loud?

There are toys scattered everywhere and I can't ignore it



@PSYCHEDMOMMY

Is it really hot in here or is it just me? I'm so uncomfortable

We all have sensory needs!

Am I an "angry mom" or is it sensory overload...

@mombrain.therapist



constant movement



bright colors & lights



scrolling screens



constant noise



clutter & mess



competing voices



too hot or too cold

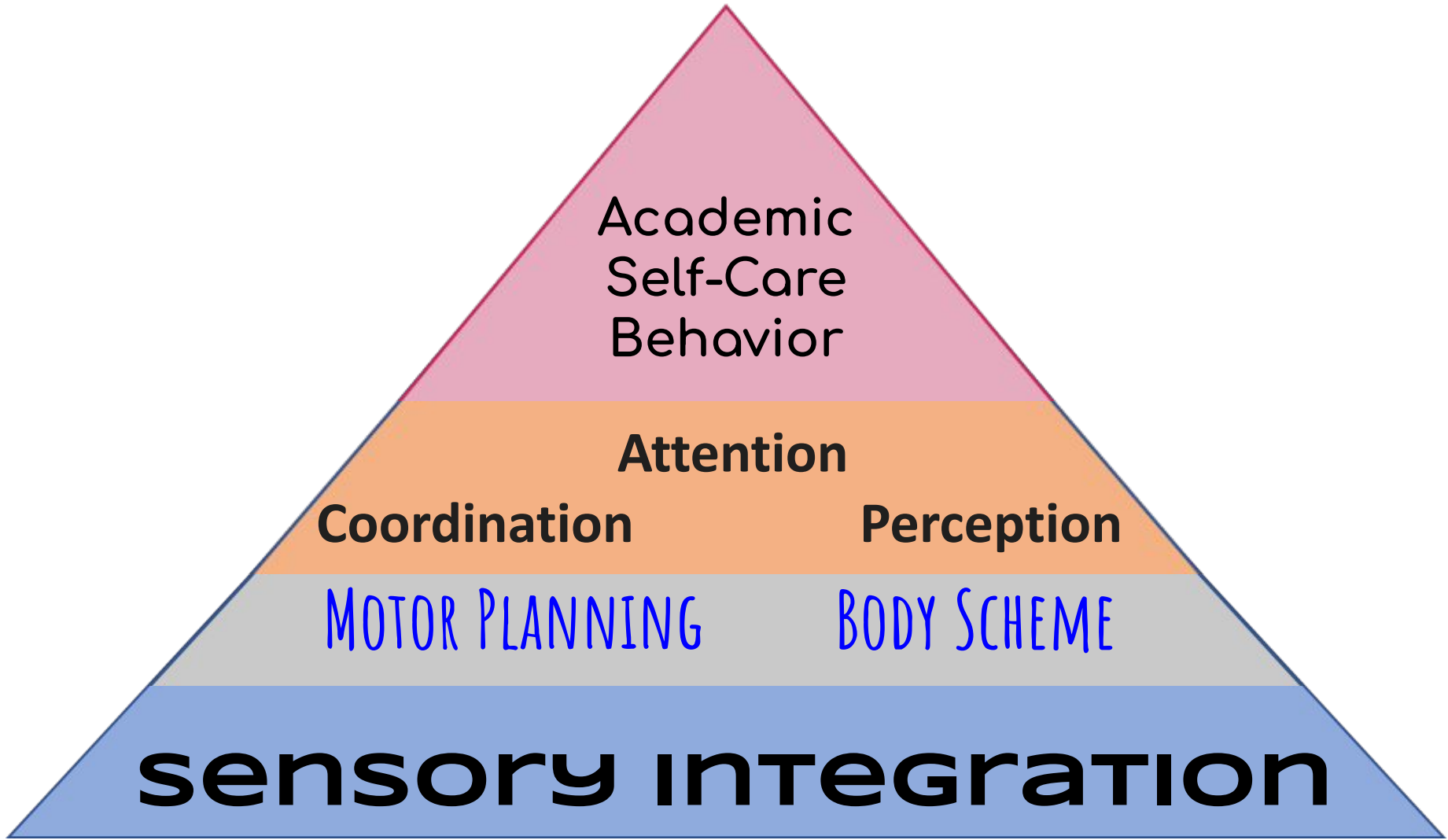


uncomfortable clothes



lots of bending + standing

Our intake of sensory information impacts us all the time. As adults, we have learned to cope but can still become overwhelmed when we are bombarded with sensory information. For children, they have not developed their coping tools fully. Therefore, they become overwhelmed much more easily.



Sensory Read Flags



Under Responsive

- Shows less of a response to sensory information than the situation demands
- Takes longer to react or needs more intense input to respond
- Needs intense or long-lasting sensory input before responding

Over Responsive/Sensory Defensiveness

- Responds to sensory messages more intensely, quickly, and/or for a longer period of time

Sensory Ideation/Planning

- Difficulty with stabilizing body, moving, or performing movement sequences

Sensory Seeking

- Constantly on the move
- Restless
- Fidgety

Sensory Discrimination

- Difficulty distinguishing between similar sensations

Under Responsive

- Shows less of a response to sensory information than the situation demands
- Takes longer to react
- Needs intense or long-lasting sensory input before responding

Under Responsive

- Does not seem to notice when touched by others
- Does not cry when hurt
- Prefers sedentary activities
- Does not promptly respond to name
- Seems to not be bothered by being hot, cold, or hungry
- Does not notice messy hands or face
- Tends to be passive and withdrawn

Sensory Seeking

- **Constantly on the move**
- **Restless**
- **Fidgety**

Under Responsive

- **Constantly touching objects or other people**
- **Invades others' personal space**
- **Rocks or wiggles when seated**
- **Enjoys crashing, falling, or rough play**

Under Responsive

- **Likes spinning, jumping, swinging, and/or rolling**
- **Has poor safety awareness or is a risk taker**
- **Licks or chews on non-food items**
- **Talks excessively**
- **Seeks out messy play**

Over Responsive/Sensory Defensiveness

- **Responds to sensory messages more intensely, quickly, and/or for a longer period of time**

Over Responsivity/Sensory Defensiveness

- **Bothered when touched by others or unexpectedly**
- **Avoids messy play (finger paint, wet glue, messy food)**
- **Bothered by scents such as perfume or air freshener**
- **Poor concentration in noisy environment**
- **Short attention span**

Over Responsivity/Sensory Defensiveness

- **Avoids active games that include running, jumping, etc.**
- **Upset by everyday common noises (such as AC or refrigerator)**
- **Has difficulty with transitions and schedule changes, especially the unexpected**
- **Reacts aggressively or impulsively to everyday stimuli**

Sensory Discrimination

- **Difficulty distinguishing between similar sensations**

Sensory Discrimination

- Needs to look at hands to manipulate objects
- Presses too hard or too lightly handling objects or during writing
- Difficulty sitting down smoothly in a chair (“plops down”)
- Poor ability to detect what or where someone is touching them
- Struggles to localize sound

Sensory Discrimination

- **Trouble with directions/gets lost easily**
- **Takes longer to complete tasks or does things “the hard way”**
- **Avoids puzzles and visual games**

Sensory Ideation/Planning

- **Difficulty with stabilizing body, moving, or performing movement sequences**

Sensory Ideation/Planning

- **Seems weak or tires easily**
- **Has trouble learning new motor skills**
- **Appears clumsy or awkward, loses balance easily**
- **Slumps in Chair**
- **Has limited play schemes**
- **Struggles with multi-step tasks**
- **Has poor ball skills**
- **Is a sloppy or messy eater**

Visual Sensitivity

What you may see:

- Difficulty with eye contact
- Rubs eyes
- Puts head down
- Complains of headaches
- Is happier when lights are dim or off
- Does not attend to task due to watching everything else in the room
- Sun is too bright when outside

Visual Sensitivity - What To Try

At School

- ★ Use light covers
- ★ Decrease clutter on the walls or in the room
- ★ Use dividers to decrease distraction
- ★ Have the student's desk face away from the mainstream of the classroom
- ★ Provide work in visual "chunks"
- ★ Have student wear sunglasses outside

At Home

- Dim the lights
- Decrease clutter
- Sunglasses when outside
- Do homework or reading in "chunks"; block out some of the work so that it is not so visually overwhelming

Tactile Sensitivity

What you may see:

- Hesitant to touch certain things
- Extreme Clothing Preferences- softness, tags, seams, tightness, type of waistband, feel of print design, etc.
- Wears the same clothes all the time

Tactile Sensitivity - What To Try

At School

- ★ Have others approach child from front so they see you coming
- ★ Have student sit out of the way of traffic so they are not bumped
- ★ Have student be in the back or front of the line

At Home

- Compression clothing
 - ◆ Under Armor shirt that is a size too small
 - ◆ Compression socks
 - ◆ Compression vest
- Have child be a part of shopping for preferred clothes
- Encourage messy play

Auditory Sensitivity

What you may see:

- Asks others to be quiet
- Covers ears, becomes upset with loud or unexpected noises
- Appears distracted (cannot filter background noise, may hear sounds others do not)
- Difficulty following verbal instructions

Auditory Sensitivity - What To Try

At School

- ★ Noise cancelling headphones or earplug
- ★ Decrease noise in the room or give quiet working space

At Home

- Noise canceling headphones or white noise
- Have a quiet space for child to access when needed
- Communicate how long an upsetting noise will last
 - ◆ “Dinner will take X minutes”
- Whenever possible, have child be a part of the “loud” activity

Orally Seeking

What you may see:

- Licks, tastes or chews inedible objects
- Drools
- Chews on hair
- Chews on shirt or fingers
- Puts objects in mouth

Oral Seeking - What To Try

At School

- ★ Spill-proof water bottle
- ★ Chewy or chewing gum
- ★ Chewy or crunchy snacks

At Home

- “Bubble Mountain” - blow bubbles using oxygen or fish tank tubing for a fun oral stimulation activity
- Explore spicy and sour foods to provide extra sensory input. Ideas include super sour gummies, Lemonheads, cinnamon candy, etc.

Movement Seeking

What you may see:

- In constant motion and cannot sit still (wiggly)
- Spins or runs excessively on the playground
- Difficulty attending to instruction
- Bumps into peers in line

Movement Seeking - What To Try

At School

- ★ Alternative seating
- ★ Allow student to run errands such as attendance or delivering books
- ★ Band on the bottom of the chair for leg movement
- ★ Allow standing during appropriate times
- ★ Heavy work/joint compression activities

At Home

- Assign chores that incorporate heavy work
 - ◆ such as carrying or pushing laundry basket of blankets
 - ◆ cleaning windows - using vinegar water is non-toxic if consumption is a concern
 - ◆ Retrieving or putting away groceries like canned good or gallon of milk
- Have wheelbarrow races or obstacle course

Tactile Seeking

What you may see:

- Needs to touch everyone or everything
- Is not bothered by getting hurt
- May not be aware that nose is running or hands/face are dirty
- May be self abusive
- Seeks out surfaces or textures that provide strong feedback
- Likes to be messy
- Picks at skin

Tactile Seeking - What To Try

At School

- ★ Quiet fidgets, putty or stress ball
- ★ Lap pad with puffy paint
- ★ Velcro under desk
- ★ Rub lotion on hands/arms for deep pressure

At Home

- Give bear hugs with lots of squeezing
- Vibrating toys or a battery powered toothbrush
- Heavy work activities

Sensory (Meltdowns)	Behavior (Tantrums)
<input type="checkbox"/> Inability (difficulty) to calm down immediately...even if you give them what they want <input type="checkbox"/> Student does not seem to have control over behavior/appears panicky <input type="checkbox"/> Behavior modification is useless	<input type="checkbox"/> Student can often turn negative reaction off/on <input type="checkbox"/> Once student gets desired reward...behavior quickly ends
<input type="checkbox"/> Student does not care if anyone pays attention	<input type="checkbox"/> Student checks to see they are getting attention <input type="checkbox"/> Enjoys the audience & interaction/reward from behavior
<input type="checkbox"/> There is no goal to behavior (other than to remove from aversive sensory stimuli)	<input type="checkbox"/> Driven by want/goal (purposeful)
<input type="checkbox"/> No clear antecedent or antecedent is a sensory/ environmental trigger	<input type="checkbox"/> Can identify antecedent
<input type="checkbox"/> ANS signs seen which are not under students control (red ears, sweating, flatulence, dilated pupils). It may take 30 minutes or longer for student to return to normal	<input type="checkbox"/> No ANS signs (student returns to normal within 5 min)
<input type="checkbox"/> Responds well to flexibility for sensory opportunities	<input type="checkbox"/> Responds well to structure and clear boundaries, rewards/consequences, consistency
<input type="checkbox"/> Unable to process/attend to events around them	<input type="checkbox"/> Student is aware of what is going on around them
<input type="checkbox"/> Student's observable behavior/body language increase or decrease sensory input (may include hugging self/jumping/hitting/biting with no malice)	
<input type="checkbox"/> Behavior may increase or decrease with environmental changes (noise, lighting, etc)	

Is it Sensory or Behavior?

Most Common Causes of Sensory Meltdowns

- Sensory Overload
- Inability to maintain self-regulation (or a “ready state”)
- The inability to cope with a new or challenging situation
- Inability to communicate wants or needs
- Difficulty with transitions
- Lack of sleep or overly tired
- Lack of proper nutrition or too much of wrong food
- Change in routine

What makes a sensory diet effective?

- Gather information about the student's needs related to sensory processing
- Training and monitoring
- Consistency throughout the day
- Tracking - what you do, the student's responses, and behavior
- Diet needs to be purposeful and meaningful
- Communication with EVERYONE on the child's team
- Remember "one size does not fit all"

Is it working? How do we know?

A child's sensory needs may fluctuate on a day to day basis. We have to look at trends over a period of time to truly grasp what is working and what isn't. Just because something worked on Monday doesn't guarantee that it will work on Tuesday (and vice versa).

S.E.N.S.E. - Making Sense out of the Situation!

S. Stop, assess the situation, don't assume it is "behavior"

Try not to simply react, as it is important to analyze the situation to determine if there is a sensory trigger. Do not force the child through the situation. This can create further negative reactions from the nervous system. Also maintaining a calm and objective state of mind will benefit the situation. Children co-regulate via those around them. If you are stressed or angry or panicked, this will create further dysregulation.

E. Environmental change

Change the environment, even if only briefly. This can help you determine if there is indeed a sensory trigger. It will also give yourself another minute to assess the situation. And when I refer to changing the environment, this can simply be turning the T.V. off in the room, as the auditory input may be too much for the child.

N. Note the child's response to the environment change

Notice how the child responds to the change. Watch closely for body language, pattern of breathing, tone of voice, etc. This will tell you so much about the state of the nervous system. If you see a positive change, then you are on the right track. If not, change something else.

S. Sensory strategies and tools

Implement sensory strategies right there on the spot...from applying deep pressure touch or a head compression...or letting your child bury his/her head into your chest while you give a bear hug...or offering a sensory retreat, a squish box, a weighted blanket of noise cancelling headphones. The sensory tool and strategy may also be something as simple as a Camelback water bottle or encouraging deep breaths. The list goes on and on.

E. Embrace the positive and learn from the moment

Embrace the moment as a learning experience and develop more understanding and respect for your child's sensory needs and differences. Do not let frustration get in the way or have thoughts like "how do I fix this" or write it off as another bad experience. Learn from it...respond with respect...and embrace your child for who he/she is and will become. Remember that children simply want to be loved and understood.

- ***Understanding Your Child's Sensory Signals, 3rd Edition*** by Angie Voss, OTR

Sensory in a Nutshell

1. A sensory meltdown is different from a standard meltdown. How you handle it is also different.
2. Children naturally want to please others and do not intend to misbehave. All they really want is to be accepted and loved. Before reacting with a reprimand or a punishment, or making an assumption of behavior, consider a sensory tool or strategy.
3. **Sensory anchor** is a more respectful and positive concept than the term "stimming". It has a less negative feel to it.
4. Fight or flight and triggering the sympathetic nervous system happen more often for children with sensory differences and sometimes for no obvious sensory reason.
5. A child with sensory differences may spend the entire day just trying to achieve and maintain a ready state and is consumed with trying to self-regulate. This can be exhausting for the child.
6. Sensory input is powerful. Understanding a child's sensory needs and differences can truly change the quality of life for that child.
7. The brain responds best to purposeful and meaningful activities. A rigid sensory diet is not nearly as likely to be carried over long term as naturally incorporating sensory activities into the day. Sensory needs and challenges can change on a day to day basis. One technique, tool, or strategy may work one day and not the next.
8. Vestibular, proprioceptive, and tactile input are the three most important sensory systems to support. They are the foundation to all development.
9. To truly support the child's development, sensory systems, and overall nervous system development, it's critical to see the big picture of health and how to support it the best.
10. Proprioception is your friend and go-to sensory system.
11. The vestibular and auditory systems have an incredible connection. Use this to your advantage.
12. The massive addiction and overuse of screen time by children is depriving the nervous system of critical sensory input for proper development.
13. Sensory modulation is how our brains sort out and organize all the sensory input. This is a very common area of need for children with sensory differences.
14. The vestibular system is the most complicated, yet most important sensory system to understand. The brain thrives on movement to attend and process information. Keep this in mind when it comes to academics and learning.

Popular Sensory Items

While these items are trendy and therefore wanted, they are not for everyone!

Weighted Blankets

- While many children benefit from these, they are a huge safety risk!
- The weight of the blanket should only be 10% - 15% of the child's body weight. Most blankets that you can buy in everyday stores are too heavy for young children

Popular Sensory Items

While these items are trendy and therefore wanted, they are not for everyone!

Trampolines

- These are a huge safety concern and child needs to be supervised
- If using a small trampoline, consider the safety of the surrounding area if the child were to fall
- Keep in mind that while jumping is heavy work and great proprioceptive input, it is too overwhelming for some children and has the opposite effect

Popular Sensory Items

While these items are trendy and therefore wanted, they are not for everyone!

- Fidgets in school, a true fidget should fit in the palm of a child's hand, be silent, and not be visually stimulating to the child or peers
- Fidget Spinners and Fidget Cubes are not true fidgets and are not appropriate for use in school
- In school , some of the best fidgets are cheap and everyday items
 - Velcro under or on the desk
 - Beads on a paperclip
 - Small stress balls
 - Small tin of putty (student dependent)

Popular Sensory Items

At home, the appropriate fidget is whatever meets the needs of ALL members of the household!

Resources

Books

- ★ ***Understanding Your Child's Sensory Signals, 3rd Edition*** by Angie Voss, OTR
- ★ ***Answers to Questions Teachers Ask About Sensory Integration*** by Carol Kranowitz, Stacey Szklut, and others
- ★ ***Introduction to How Does Your Engine Run*** by Mary Sue Williams and Sherry Shellenberger

Resources

Websites:

- ★ Sensory Stories By Nicole
<https://www.nicolefilipponeauthor.com/>
- ★ Understood.org
www.understood.org/
- ★ Instagram accounts @curious_neuron and @adhd_couple

Questions?

More Questions?

If you have specific questions about your child's needs, you can reach out to your school OT or intervention specialist. Even if your child does not receive school based OT services, you can reach out via email to ask questions if needed.