

Sensory Processing Disorders

Sally Burton-Hoyle, Ed.D
Eastern Michigan University





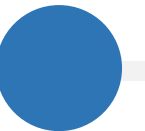
Sensory Processing Disorders



Sally Burton-Hoyle, Ed.D
Eastern Michigan University

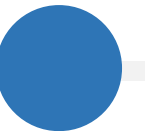
AGENDA

- What is Sensation?
- Identifying your sensory style
- What is a Sensory Processing Disorder?
- Sensory Avoiding
- Sensory Seeking
- Impacts on Behavior
- Sensory Areas
- The Sensory Diet



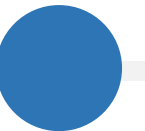
Is this your child?

- Tony was so funny and so bright, he could draw and write such creative stories, but if there was any change in routine, such as a fire or tornado drill, he would scream and rock uncontrollably. He was impossible to calm down and if anyone tried to touch him he would strike out at them.
- When Tony had to go to the bathroom he would take off all of his clothes because he feared that he may get his clothes wet.
- People mistakenly believed Tony had autism and that a sensory disorder was synonymous with autism.
- A sensory processing disorder is diagnosed through the expertise of an Occupational Therapist. Eligibility for school services for sensory issues is done through an Occupational Therapist.



Sensation is Everywhere!

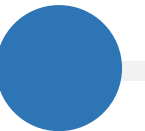
- Are you ticklish?
- Do you cut the tags out of your clothes?
- Do you need to jog *HARD* to have a good day?
- Do you cringe at the sip of sour lemonade?
- Do you keep the shades drawn?
- Do you crave high volume on your ipod?
- We all deal with sensation differently!!



My Sensory Experience

When I was pregnant I became nauseated when I smelled hamburger frying?

Did you experience any strange sensations when you or partner was pregnant?



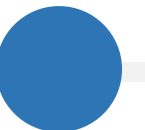
How do you take in the environment? (Dunn)

Seekers want a daily routine packed with sensation

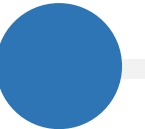
Bystanders are easy going and loosely organized

Avoiders become disrupted by any changes in their life management strategies

Sensors are picky because their sensory needs are so specific

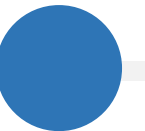


What is your approach to self-regulating?



Sensory Overload

If you cannot regulate how you deal with sensation and the environment then challenging behavior occurs!



What is Sensory Processing Disorder?

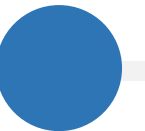
- Sensory Processing disorder (SPD) affects the way a person responds to information that comes in through the senses.

A person with SPD can be oversensitive or unresponsive to sound, touch, taste, sight, and/or smell.

SPD can range in severity, and in more extreme cases, can make it difficult to get through everyday tasks.

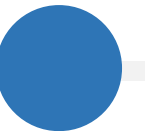


FACT:
1 in 20 children are
affected by
symptoms of
Sensory Processing
Disorders (SPD)



Signs of SPD

- Think clothing feels too scratchy or itchy.
- Think lights seem too bright.
- Think sounds seem too loud.
- Think soft touches feel too hard.
- Experience food textures make them gag.
- Have poor balance or seem clumsy.
- Are afraid to play on the swings.
- Extreme reactions for no apparent reason.



Signs of SPD in adults

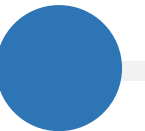
- Caftans are your favorite article of clothing – anything that's loose and breezy.
- During thunderstorms, you put on your sound cancelling headphones and zone out until it's over. The loud noise is too much.
- While you love a dip in the pool, the mud and sand of lakes ruins the fun of swimming for you.
- Even though you love your significant other, you hate when he gives you big bear hugs.
- You avoid group family photos at the holidays. The bright flashes set you off.
- At the mall, you avoid walking through the perfume department at all costs.
- Even when exhausted, you can't stomach coffee. It's too bitter.
- Sometimes the texture of food is so repulsive, you have to spit it out.



How does SPD impact behavior?

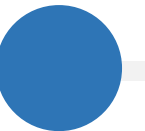
SPD disorder makes it difficult to interact with your daily environment.

This impacts how you relate to others, study and learn, participate in sports and group activities, and follow your dreams.



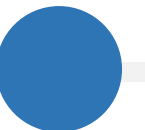
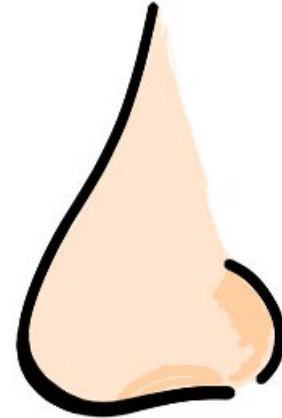
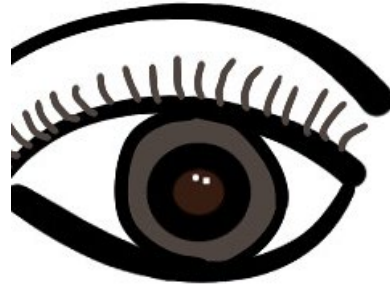
How does SPD impact behavior?

- SPD disrupts how the brain — the top of the central nervous system — takes in, organizes, and uses the messages received through our body's receptors.
- We take in sensory information through our eyes, ears, muscles, joints, skin and inner ears, and we use those sensations — we integrate them, modulate them, analyze them and interpret them — for immediate and appropriate everyday functioning.



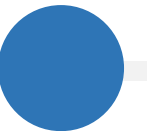
What are the Primary Sensory Areas?

Alongside the commonly recognized “5 senses” (taste, touch, hearing, sight and smell) a person on the autism spectrum may also over-react or under-react to two additional senses: the vestibular (balance and motor skills)and proprioceptive senses (body awareness).



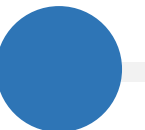
What is Sensory Processing disorders (SPD)?

- Kids may be oversensitive to sensory input, undersensitive, or both.
- **Hypersensitive**= When a person experiences too much of the world and the sensory experience is “turned up”. (Sensory Avoiding)
- **Hyposensitive**= When a person DOES not experience the normal amount of the environment. More sensory experiences are sought after. (Sensory Seeking)



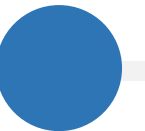
Signs and Symptoms of SPD: Sensory Avoiding

- Kids who are sensory avoiding may react to a wide range of triggers. These can include loud sounds, uncomfortable clothing, crowded spaces, or certain food smells or textures, among others. Whatever the trigger, the reaction can sometimes be extreme.
- Sensory overload can lead to sensory meltdowns. These are very different from tantrums because they're out of the child's control.



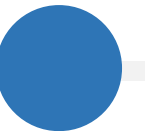
Signs and Symptoms of SPD: Sensory Seeking

- Kids who are undersensitive to sensory input and have a **need** for movement. And they may seek out input like spicy or sour tastes and physical contact and pressure.
- Constantly touches objects
 - Plays roughly and takes physical risks
 - Has a high tolerance for pain
 - Often squirms and fidgets
 - Is constantly on the move
 - Invades other people's personal space
 - Often gets distracted or feels anxious
 - Is clumsy and uncoordinated



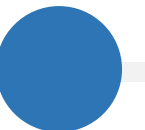
Shopping and Sensory Processing Disorders

- A crowded store can be an overwhelming experience for kids with sensory processing issues. Bright fluorescent lights can be irritating for children who are highly sensitive to certain types of lighting. For kids who dislike being touched, repeatedly brushing elbows with strangers in a packed store can make them edgy (and even trigger a meltdown). As they get older, they might dread going to the store or just avoid going to public places altogether.



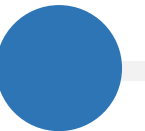
What is proprioceptive disorder?

- Children who are clumsy, uncoordinated, and sensory seeking are often experiencing proprioceptive dysfunction.
- The following are common signs of proprioceptive dysfunction: Sensory Seeking (pushes, writes too hard, plays rough, bangs or shakes feet while sitting, chews, bites, and likes tight clothes)



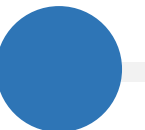
Jessica: Case Study

- Jessica is an eight year old girl who is making her parents feel out of control. Everything is a problem with Jessica such as:
- Hair brushing and hair cuts
- Fingernail and toenail cutting
- Wearing socks and dressing (fabrics are itchy, collar on her school shirt irritates her)
- When she was younger, Jessica found loud or unexpected sounds or touch overwhelming
- Jessica loves smelling perfumes, carpets and bathroom smells (yuck)



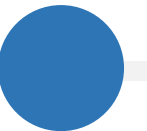
Review

- Hypersensitive= When a person experiences too much of the world and the sensory experience is “turned up”. (Sensory Avoiding)
- Hyposensitive= When a person DOES not experience the normal amount of the environment. More sensory experiences are sought after. (Sensory Seeking)
- Can you be both hyper and hyposensitive?
- YES



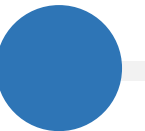
What Does SPD look Like?

- [Does your child have a sensory issue https://youtu.be/Sti8iNlVlco](https://youtu.be/Sti8iNlVlco)



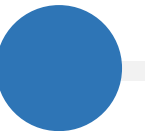
Part Two

- The sensory areas
- The Sensory Diet



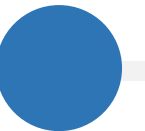
Thoughts?

1. Did you identify any similarities with your child?
2. Is your child sensory seeking or sensory avoiding?
3. Is there any specific sensory area you may notice that your child demonstrates?



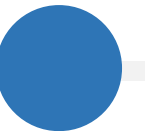
Sensory Areas

- Auditory Processing Disorders
- Visual
- Auditory
- Tactile
- Proprioceptive
- Vestibular issues
- Olfactory
- Taste



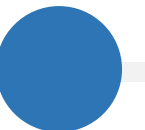
Auditory Processing Disorders

- Auditory processing disorder (APD) is a hearing problem that affects about 5% of school-aged children.
- Kids with this condition, also known as auditory processing disorder can't process what they hear in the same way other kids do.
- This is because their ears and brain don't fully coordinate



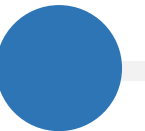
Auditory Hypersensitivity

- Thunderstorms may send them covering under the blankets.
- Depression
- Anxiety
- Ear pain
- Relationship problems
- Trouble connecting with others (social isolation and avoidance)
- Some sounds that might seem louder than they should include:
 - A running faucet
 - A kitchen appliance, like a refrigerator or dishwasher
 - A car engine
 - A loud conversation



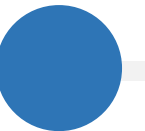
Auditory Hyposensitivity

- Little or no vocalizing/babbling as an infant.
- Speaks in a loud voice and/or excessively.
- Likes excessively loud music, games, TV.
- Difficulty with verbal cues of to name being called.
- Difficulty understanding or remembering what was said.
- Needs instructions repeated, or will say "what?" frequently.
- Talks self through task, often out loud.
- Appears oblivious to certain sounds
- Disorientation/confusion about where a sound is coming from.



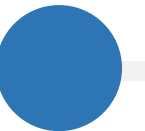
Auditory Activities

- Get outside and listen. Go to the beach or sit still and listen to the rain, thunder, and so on. If you hear birds singing, try to identify what direction a given bird is calling from.
- Listen to natural sound recordings. There are many recordings of rain falling, ocean waves, bird songs, and so on. Sometimes natural sound recordings also feature light instrumentation with flutes, keyboards, etc. Some children and adults find they sleep better if they play such music.
- Play a listening game. You and your child sit very quietly and try to identify the sounds you hear (traffic, the hum of the refrigerator, a door shutting, etc.) and where it's coming from.
- Find calming, focusing music. Listen to music specially engineered to promote calm, focus, energy, or creativity. Keep in mind, of course, that musical preference is highly idiosyncratic, so this will take some experimentation. The music you love may distress your child, while the music he finds so soothing may drive you up the wall.



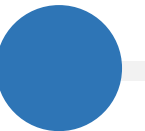
Audio Reactivity

- [hyper reactivity auditory https://www.thewatsoninstitute.org/watson-life-resources/situation/auditory-sensitivity-toolkit/](https://www.thewatsoninstitute.org/watson-life-resources/situation/auditory-sensitivity-toolkit/)
direct video link: <https://youtu.be/tM5jZPd1fVA>



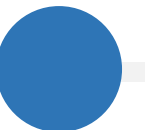
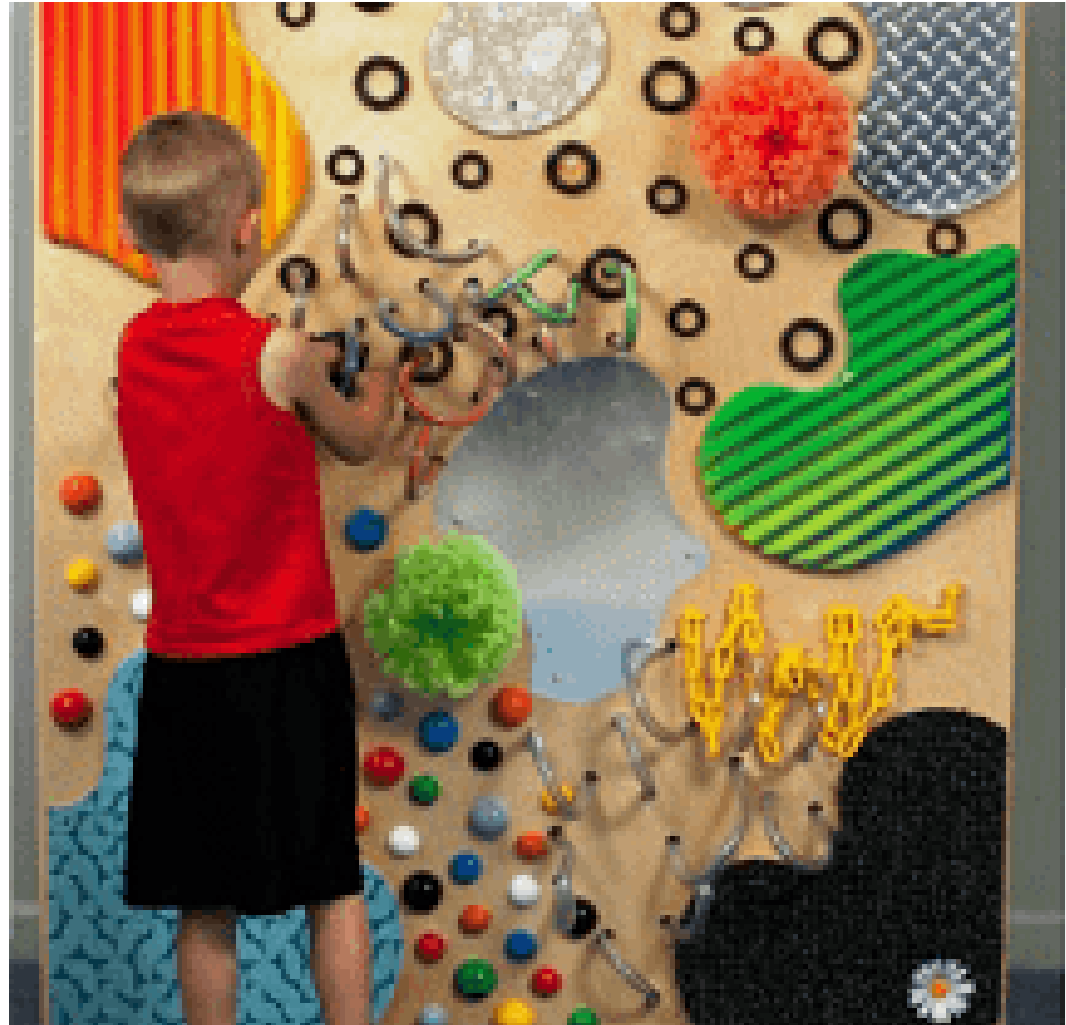
What is a visual sensory processing disorder?

- A **visual processing**, or perceptual, **disorder** refers to a hindered ability to make sense of information taken in through the eyes.
- This is different from **problems** involving sight or sharpness of vision.
- Difficulties with **visual processing** affect how **visual** information is interpreted, or processed by the brain



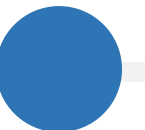
Ideas for Visual
hyposensitivity

Visual (Textured Wall)



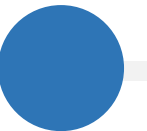
Eating at Restaurants

- A noisy restaurant can seem like an acoustic assault for kids with sensory processing issues. Young children may hide under the table or get up and move in an effort to escape the noise. They might have aversions to foods that are “crunchy” (cereal, carrots), “slimy” (melon, spaghetti) or “smelly” (fish, cheese). Kids with sensory processing issues might also have strong preferences for foods to be served at different temperatures. For instance, they may turn/throw away drinks served with ice.



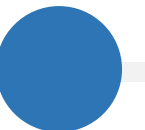
Visual Hypersensitivity

- Fluorescent lights: people with auditory and visual sensitivity can see and hear fluorescent lights as they flicker on and off. This can range from mildly annoying to profoundly distracting.
- Downcast lights: light that shoots straight down from the ceiling may be very difficult for people to tolerate.
- Glare: From sunlight or artificial lighting, glare can make it difficult for people to see and concentrate.
- Visual overcrowding: Too many things to look at in the environment can be overwhelming or even lead to a sensory “white out.”



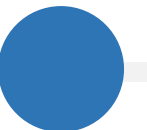
Visual Hypersensitivity

- Too much movement in a playground may make it too uncomfortable for a child to play happily.
- Too many items on a bookshelf, in a toy bin, or in a dresser drawer may make it impossible to find a the desired item.
- Too many questions on a school worksheet can overload and discourage a student even if the student knows the material.



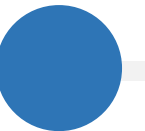
Visual Hyposensitivity

- Complains about "seeing double."
- Fatigues easily with reading, writing, drawing, playing video games
- Frequently chews hair, shirt, fingers.
- Likes to put objects in their mouth.
- Likes brushing teeth/vibrating toothbrushes, and even trips to the dentist



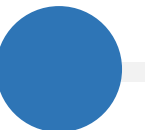
Tactile Disorders

- What is Tactile or touch sensitivity?
- A commonly reported sensory issue for children or adults with sensory processing disorder is touch sensitivity.
- Sensory integration trained occupational therapists would usually call this tactile sensory issue 'tactile defensiveness.'



Tactile Hypersensitivity

- Aversion to touch such as hugs and/or kisses (and might rub away kisses)
- Difficulty with teeth brushing.
- Haircuts and hair brushing.
- Sensitivity to touch when cutting finger or toe nails.
- Being bothered by the feeling of certain fabrics or clothing textures
- Dislikes socks, especially the seams and has a preference for the position of sock seams
- Difficulty with wearing shoes
- Avoidance of messy textures such as finger paint, glue and playdough; and sometimes dry textures like sand



Tactile Hyposensitivity

- Craves touch. Needs to touch everything and everyone.
- Self-abusive; pinching, biting, cutting, head-banging.
- Has a high pain tolerance.
- Likes to put objects in their mouth.
- Seeks out surfaces and textures that provide strong tactile feedback.
- Often is not aware of being touched/bumped unless done with extreme force or sensitivity.
- Often injures self; burns, cuts, bruises, because harmful acts do not register as easily.
- May not be aware than hands or face is dirty.



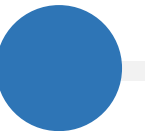
Tactile Activities

- Taste input is perceived by our tongue but how we interpret or experience it is strongly influenced by our sense of smell. As an experiment, chew some gum until the flavor is gone, then hold a lemon under your nose; the gum will taste like lemon. Help your child with to broaden the tastes he tolerates or likes, and use strong tastes he enjoys to help arouse his sluggish system.
- Give strong-tasting foods before introducing new ones. Strong tastes can stimulate the mouth of an undersensitive child and make him more willing to try new foods. Before presenting new foods, let the child have one peppermint, sour gummy bear, or other strong-flavored food.
- Play a taste game. If your child does not have a strong negative reaction to refined sugar (becomes very “hyper” or sleepy), get an assortment of flavored jellybeans. Eat one at a time, and have her guess which flavor it is. If you wish to avoid sugar (and artificial color and flavor in most candies), you can play this game with slices of fruit, or another healthier snack.



Tactile: <https://www.fantasticfunandlearning.com/preschool-rain-theme-counting-sensory-bin.html>

TACTILE SENSORY CARDS



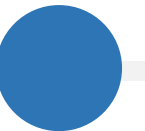
Proprioceptive Ideas

- Proprioceptive input (sensations from joints, muscles and connective tissues that underlie body awareness) can be obtained by lifting, pushing, and pulling heavy objects, including one's own weight.
- A child can also stimulate the proprioceptive sense by engaging in activities that push joints together like pushing something heavy or pull joints apart like hanging from monkey bars.



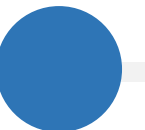
Proprioceptive: Toddlers and preschoolers

- Make a “burrito” or “sandwich.” Firmly press on your child’s arms legs and back with pillows or make a “burrito” by rolling her up in a blanket.
- Push and pull. She can push her own stroller, and a stronger child can push a stroller or cart filled with weighted objects such as groceries.
- Carry that weight. Your child can wear a backpack or fanny pack filled with toys (not too heavy!).
- Child on mini-trampoline



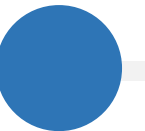
Proprioceptive Ideas

- Push, pull, and carry. Rake leaves, push heavy objects like firewood in a wheelbarrow, do push-ups against the wall, wear a heavy knapsack (not too heavy!) or pull a luggage cart-style backpack, or mow the lawn with a push mower.
- Reassuring pressure. Get a firm massage, use a weighted vest or lap pad from a therapy catalog, or place light weights in the pockets of a fishing, athletic or regular type of vest. (Please see *Raising a Sensory Smart Child* for weighted wearable recommendations and precautions)



Vestibular Ideas

- Vestibular input (the sense of movement, centered in the inner ear).
- Any type of movement will stimulate the vestibular receptors, but spinning, swinging, and hanging upside down provide the most intense, longest lasting input.
- If your child has vestibular (movement) sensitivities, please work closely with a sensory smart OT who can help you recognize and prevent signs of nervous system overload.



Vestibular

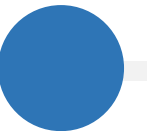
Vestibular

<https://yourkidstable.com/vestibular-activities-and-input/>



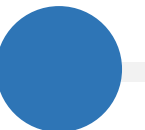
Olfactory

- Inability to process odors accurately, their origin, volume, intensity and/or location.



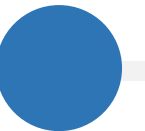
Olfactory/Smell Ideas

- Olfactory input (sense of smell) comes through the nose and goes straight to the most primitive, emotional part of the brain. So if your child is upset by something being stinky, it's no wonder. Certain odors can stimulate, calm, or send him into sensory overload.
- Smell stuff! Explore scents with your child to find ones that work best to meet your goal (to soothe him or to wake him up). Everyone has different preferences, but vanilla and rose scents are generally calming. Peppermint and citrus are usually alerting. Let's say your child needs help staying calm and loves vanilla. You can use high-quality vanilla soap and bath oils at bath time, vanilla candles or essential oils in an aromatherapy machine at bedtime, and vanilla body lotion. Avoid synthetic scents.



Taste

- Taste input is perceived by our tongue but how we interpret or experience it is strongly influenced by our sense of smell. As an experiment, chew some gum until the flavor is gone, then hold a lemon under your nose; the gum will taste like lemon. Help your child with to broaden the tastes he tolerates or likes, and use strong tastes he enjoys to help arouse his sluggish system.
- Give strong-tasting foods before introducing new ones. Strong tastes can stimulate the mouth of an undersensitive child and make him more willing to try new foods. Before presenting new foods, let the child have one peppermint, sour gummy bear, or other strong-flavored food.



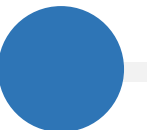
Taste Ideas

- Play a taste game. If your child does not have a strong negative reaction to refined sugar (becomes very “hyper” or sleepy), get an assortment of flavored jellybeans. Eat one at a time, and have her guess which flavor it is. If you wish to avoid sugar (and artificial color and flavor in most candies), you can play this game with slices of fruit, or another healthier snack.
- Involve him in food preparation. Children are more likely to taste something if they help make it. Let your child help you grow fruit, vegetables, and herbs, and plan dinner and shop. Give him a sense of control: let him choose between chicken or fish, string beans or sugar snaps, potato or rice. Then let your child put the meat in the baking pan, break off vegetable tips and dump in water, and so on. Let him help you arrange food on each plate so it looks nice.
- Play with your food. A so-called picky eater may be more willing to eat “rocks and trees” than meatballs and broccoli. Fun arrangements such as some vegetable sticks and grape tomatoes placed in a smiley face pattern on a plate encourage kids to taste something new.



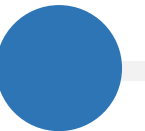
What is a Sensory Diet?

- A “sensory diet” (coined by OT Patricia Wilbarger) is a carefully designed, personalized activity plan that provides the sensory input a person needs to stay focused and organized throughout the day.
- Just as you may jiggle your knee or chew gum to stay awake or soak in a hot tub to unwind, children need to engage in stabilizing, focusing activities too. Infants, young children, teens, and adults with mild to severe sensory issues can all benefit from a personalized sensory diet.”



Sensory Diet

- “The great news is that the effects of a sensory diet, combined with professional intervention, are usually immediate AND cumulative. Activities that perk up your child or calm him down are not only effective in the moment; they actually help to change your child’s nervous system over time so that he or she is better able to:
 - tolerate sensations and situations that are challenging
 - regulate emotions, alertness and increase attention span
 - reduce unwanted sensory seeking and sensory avoiding behaviors
 - handle transitions with less stress”.




Sensory Diet

- [sensory diet https://youtu.be/9o9NMAyaDUM?feature=shared](https://youtu.be/9o9NMAyaDUM?feature=shared)

REACH OUT ASD
Lynn McCann
Autism Specialist, Teacher and Consultant

We experience the world through...

1. Vision
2. Smell
3. Hearing
4. Touch
5. Taste
6. Vestibular (balance)
7. Proprioception (body awareness)
8. Interoception (state of internal organs -pain, heat, illness, hunger toileting etc)



The image contains several illustrations corresponding to the sensory list: a pink nose, a human ear, a green eye, pink lips, two hands touching, a child riding a colorful spring rider, and a child holding a mirror to their face.



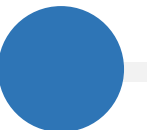
Sensory Processing Disorder

“The great news is that the effects of a sensory diet, combined with professional intervention, are usually immediate AND cumulative.”

Jack was so angry all the time and once he began working with the OT and his sensory diet he became a changed kid.

His school principal asked if we had put Jack on medication!!!!

Mom experienced pure joy at the immediacy of the sensory diet!



Jack's Sensory Diet

Chair push ups

Wall push ups

Laying on his stomach and throwing balls into a target

Laying on his stomach on a platform swing and throwing balls into a basket

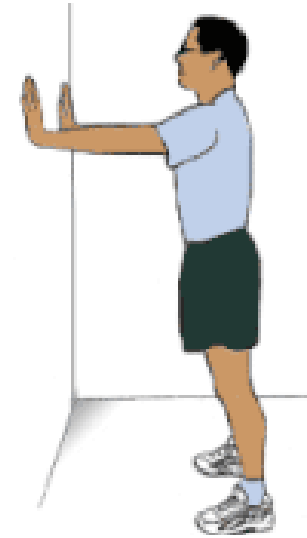
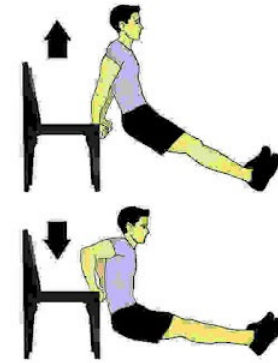
Read from left to right (we read box scores)

Scooter boards into foam wall

Running around the block

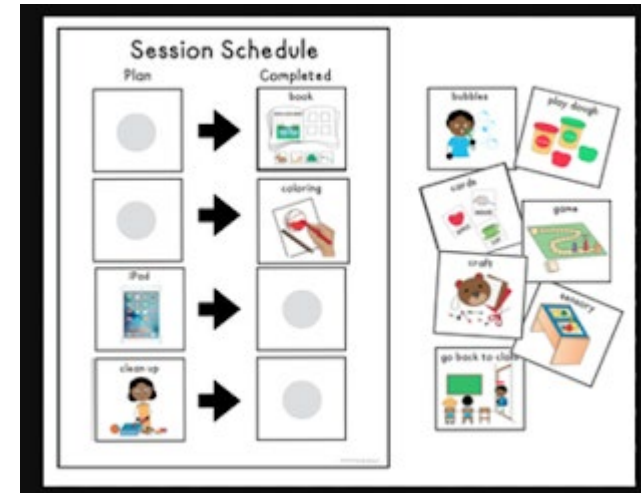
Football, track, wrestling

College Football Player NMU



How will the student know what he is to do?

- What type of visual schedule will be used?
- Pecs
- Visual Schedule
- Checklist
- Now and Next Board



Write the script that will be used

- Staff script: When T arrives at school, the paraprofessional will take her to the classroom to drop off her backpack, coat, etc. She can say: “Good morning, T! Let’s take your things to the classroom.” The paraprofessional will take T to the sensory room. She can say: “T, let’s go to the sensory room.” The paraprofessional will tell T to hold onto the handle of the trampoline and step onto the trampoline. She will tell T: “T, you can start jumping now. I will set the timer for 5 minutes. When the timer goes off, it is time to go to back to the classroom for breakfast.”
- When the timer goes off, T will accompany the paraprofessional back to the classroom.



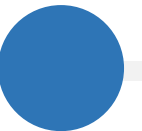
Sample Sensory Diet

In the Morning

- Massage feet and back to help wake up
- Listen to recommended therapeutic listening CD
- Use vibrating toothbrush and/or vibrating hairbrush
- Eat crunchy cereal with fruit and some protein
- Spin on Dizzy Disc Jr. as directed by your OT or PT
- Jump on mini-trampoline as directed

After School

- Go to playground for at least 30 minutes
- Push grocery cart or stroller
- Spinning as directed
- Mini-trampoline. Add variety: have him play catch or toss toys into a basket while jumping.
- Massage feet to “reorganize,” use therapy putty, make “body sandwiches,” wheelbarrow walk
- Do ball exercises as directed
- Listen to therapeutic listening CD
- Oral work — suck thick liquids through a straw, eat crunchy and chewy snacks, or chew gum before and/or during tabletop activities



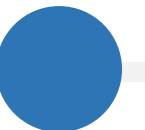
Sample Sensory Diet

At Dinnertime

- Help with cooking, mixing, chopping, etc.
- Help set table, using two hands to carry and balance a tray
- Provide crunchy and chewy foods

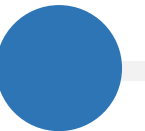
At Night

- Family time: clay projects, painting projects, etc.
- Warm bath with bubbles and calming essential oil
- Massage during reading time



Final Thoughts!

- Age appropriate
- Brief (1-2 minutes)
- Doesn't take student away from peers and learning
- Individualized for sensory needs/challenges
- Authorized by an Occupational Therapist
- Make sense and advance school and community inclusion



We are here to support you!

 @MichiganAllianceForFamilies

 @michiganallianceforfamilies

 /MichiganAlliance

For more information visit:

<https://www.michiganallianceforfamilies.org>

Call: 800-552-4821

En Español 313-217-1060

Statewide Email: info@michiganallianceforfamilies.org



Michigan Alliance for Families

Michigan Alliance for Families is an IDEA Grant Funded Initiative of the Michigan Department of Education, Office of Special Education, and Michigan's federal Parent-Training and Information Center (PTIC) funded by U.S. Department of Education, Office of Special Education Programs (OSEP).

www.michiganallianceforfamilies.org

1-800-552-4821

info@michiganallianceforfamilies.org

