Making Sense of Sensory

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Why We Are Here

To gain an understanding of the external and internal sensory systems

How a child receives, processes and interprets sensory information affects the way he develops, learns and behaves

The brain needs sensory input to focus, attend, and think clearly – we all learn better when we move

Pre-Test

• Write down how many sensory systems there are:

• Name the sensory systems:
Sensory Processing

• Sensory processing refers to the neurological wiring system in the body

• Our bodies must process constant sensory information coming from outside our world (our environment) and also from inside our own bodies

• To be neurologically organized, all the sensory systems must work together to provide us with the optimal level of arousal

Defining Sensory Processing

“Sensory processing refers to the way the nervous system receives messages from the senses and turns them into appropriate motor and behaviors responses.” - SPD Foundation

“Sensory processing is a complex set of actions that enable the brain to understand what is going on both inside your body and in the world around you.” - KU Med Center (classes.kumc.edu)
Sensory Processing vs. Sensory Acuity

- Sensory acuity is the actual physical ability of the sensory organs to receive input while sensory processing is the ability to interpret the information the brain has received.
- Sensory acuity needs are addressed with devices such as glasses and hearing aids.
- Sensory processing needs are addressed with changes to the environment or activity.

Sensory Processing Disorder (SPD)

- The way young children take in and respond to sensory information can significantly impact their participation, independence and engagement in daily activities.
- Some young children may present with sensory challenges which often results in less than desirable behaviors.
- “Sensory Processing Disorder is a neurological disorder in which the sensory information that the individual perceives results in abnormal responses.”
  
  - STAR Center (spdstar.org)
Pioneering occupational therapist, Jean Ayres, likened sensory processing disorder to a neurological traffic jam that prevents certain parts of the brain from receiving the information needed to interpret sensory information correctly.

Sensory Processing Disorder

- Sensory Processing Disorder is usually treated by an Occupational Therapist.
- However, all early childhood professionals need to have a basic understanding of sensory processing and be equipped with some strategies on ways to help young children who present with sensory issues.

Can you think of a child you know with sensory issues who has some challenging behaviors at times?
What are your sensory quirks?

There are variations of what is considered “normal”

Everybody Loves Raymond: Robert’s Chin

Displeasure vs. Disorder

• There are certain kinds of sensory input that cause you and I displeasure
• While most people have occasional difficulty with sensory processing (displeasure), to get diagnosed with Sensory Processing Disorder these difficulties must be chronic and disrupt the person’s life on a daily basis (cause total discombobulation)
• In young children who have Sensory Processing Disorder, these sensory difficulties are interfering with learning and development, and thus treatment is warranted
Etiologies of SPD

Dr. Lucy Jane Miller suggests 3 likely contributors to Sensory Processing Disorder:

1. Heredity (the apple doesn’t fall far from the tree)
2. Prenatal and delivery complications
3. Environmental factors

Prevalence of SPD

5% - 16%

• One study shows that 1 in 20 children are affected by SPD = Prevalence of 5%
  (Ahn, Miller, Milberger, McIntosh, 2004)

• Another study suggests that 1 in 6 children experiences sensory symptoms significant enough to affect aspects of everyday life = Prevalence of 16%
  (Ben-Sasson, Carter, Briggs-Gowen, 2009)

• Atypical responses to sensory input in children with autism may be as high as 95%
  (Tomchek, Dunn 2007)
Most people with Autism have Sensory Processing Disorder, but not all people with Sensory Processing Disorder have Autism!

The 8 Senses
The 8 Senses

<table>
<thead>
<tr>
<th>External Senses</th>
<th>Internal Senses</th>
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<tr>
<td>• Visual (sight)</td>
<td>• Proprioception (sensation from muscles &amp; joints; body awareness)</td>
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<tr>
<td>• Auditory (hearing)</td>
<td>• Vestibular (balance and movement; orientation in space)</td>
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<td>• Gustatory (taste)</td>
<td>• Interoception (internal physiological body condition)</td>
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<td>• Olfactory (smell)</td>
<td></td>
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<td>• Tactile (touch)</td>
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These are considered the 5 basic sensory systems

Nervous System

Diagram showing the connections between the nervous system and various senses.
• The child’s brain has an important job: to regulate reactions to sensory input so his/her nervous system obtains the appropriate level of alertness needed for learning and development

• We want the child to be self-regulated so she is in a ready state for learning

• Self-regulation = when the child’s nervous system registers and modulates information coming in through the 8 senses

• Self regulation is one of the 7 Learning to Learn Behaviors

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Process of Self-Regulation

- Take in Multi-Sensory Information (Input)
- Integrate and process/sensory information
- Behavioral Response (Output)
Regulation

• Self-regulation is the ability to appropriately respond to change based on input from the environment and input from within your own body

• Co-regulation refers to how a person responds to and feeds off of other people (child reacts how you react)

• Dysregulation describes inappropriate responses to the environment and incoming sensory information

The Dysregulated Child

• The dysregulated child has difficulty turning sensory messages into behaviors that match the situation

• The dysregulated nervous system is either over-informed or under-informed

• There are three ways a child can be dysregulated:
  1. Over-responds to sensory input
  2. Under-responds to sensory input
  3. Craves sensory input
Dysregulation
H₂O Analogy

• Neurotypical person = filling an 8 ounce glass with tap water (we have control over the input and it doesn’t take very long)

• Sensory over-responsivity = filling a shot glass with a firehose (getting too much input too fast)

• Sensory under-responsivity = filling a large pitcher with an eye dropper = (takes an extended amount of time to get enough input)

• Sensory craving = filling a Styrofoam cup that has a small hole in the bottom (can’t ever get enough input, no matter how long you try)

Sensory Over-Responsivity

• Nervous system over-responds to sensory input
• Low threshold to sensory input (responds too quickly)
• Sensory information rushes in like a runaway freight train (too fast, too bright, too loud, too much)
• Also called “Sensory defensiveness”
• In high-alert mode; overwhelmed and anxious
• Dislikes and avoids change
• Always putting the brakes on
• “Oh no!” response
• These kids benefit from calming, organizing activities
Sensory Under-Responsivity

- Nervous system under-registers sensory input
- These kids require more input for longer periods of time with greater intensity in order to perceive information coming in through the senses
- Unaware of what’s going on in the environment
- Is in neutral most of the time
- “Huh?” response
- These kids benefit from alerting activities to “wake-up” their nervous system
- These kids often have a (mis)diagnosis of autism

Sensory Craving

- Nervous system never seems to get enough or the right kind of sensory input
- Craves sensory input all day long
- Takes bold risks
- Always has foot on the accelerator
- “More more more!” response
- These kids need help adapting and responding appropriately to sensory input
- These kids often appear impulsive and inattentive and may be described as “naughty”
Over-Responsive
Under-Responsive
Sensory Craving

• Can a child be over-responsive to certain kinds of sensory input and under-responsive to others?

  Example: Over-responsive to certain food textures; Under-responsive to pain

• Can a child be under-responsive to certain kinds of sensory input and constantly seeking other types of input?

  Example: Under-responsive to loud noises; Seeks oral input (chews on everything)

Visual Sense
**Visual Input:**
**Symptoms of Over-Responsivity**

- Sensitive to bright sunlight (insists on wearing hat or sunglasses; only plays outside after dusk)
- Dislikes flashing lights
- Difficulty keeping eyes focused on activity for appropriate time
- Easily distracted by visual stimuli
- Difficulty focusing in bright rooms or in dimly lit rooms
- Rubs eyes or squints frequently (may get headaches)
- Avoids eye contact
- Likes to play in the dark

**Visual Input:**
**Symptoms of Under-Responsivity**

- Difficulty discriminating between similar letters or figures (p/q, +/x, b/d)
- Has difficulty following a moving object
- Difficulty locating items that are often in plain sight
- Loses place when copying from book, while reading or when doing math problems
- Struggles identifying differences in pictures
- Difficulty with consistent spacing and size of letters
- Fatigues easily with school work
- Tends to write at a slant
Visual Input: Symptoms of Sensory Craving

- Is attracted to bright or spinning lights
- Likes to stare at spinning objects (e.g. ceiling fans)
- Repetitive blinking
- Moves fingers in front of eyes or pokes eyes
- Peers out of corner of eyes (peripheral vision)
- Lines up objects and then scans them repeatedly
- Flaps hands
- Turns light switches on and off repeatedly
- Is fascinated by electronic screens (TV, iPad)

Auditory Sense
Auditory Input: Symptoms of Over-Responsivity

- Bothered by sounds not noticed by others
- Fearful of loud or unexpected sounds (vacuum, sirens, hairdryer, flushing toilet, barking dog, sneezes)
- Covers ears to block out sounds
- Dislikes loud places (movie theater, parades, school assembly, Chuck E. Cheese, Wal-Mart)
- May dislike certain people because of their voice
- Tells people to “be quiet” or “stop singing”
- Strong aversion to the *Happy Birthday* song

Auditory Input: Symptoms of Under-Responsivity

- Doesn’t consistently respond to name being called
- Appears deaf at times
- Has difficulty remembering what was said
- Appears oblivious to certain sounds/doesn’t startle
- Overly tolerant of loud noises
- Unsure of where sounds are coming from
- Limited vocalizing or babbling as a baby
- Needs directions repeated/frequently says “*What?*” or “*Huh?*”
Auditory Input:
Symptoms of Sensory Craving

• Enjoys noisy environments (mall, gymnasium)
• Talks loudly/often the loudest kid in the classroom
• Prefers TV and music be played at a loud volume
• Frequently makes odd noises just to hear them
• Produces frequent vocalizations such as humming, grunting, or shrieking
• Repeats portions of videos or books (scripting)
• Covers and uncovers ears
• Snaps fingers or taps objects repeatedly

Gustatory Sense
Gustatory Sense

- The taste buds can detect 5 flavors: sweet, salty, sour, bitter and savory (umami)
- People with a well regulated gustatory sense will tolerate and welcome the introduction of new foods

Gustatory/Oral Input: Symptoms of Over-Responsivity

- Extremely picky eater (defensiveness/has food jags/eats the same foods every day)
- If severe, may cause “failure to thrive” in young children
- Gags with textured foods/may prefer to eat pureed foods long past age 1
- Strong aversion to having teeth brushed
- Dislikes toothpaste and mouthwash because of their strong flavors
- Extremely fearful of going to the dentist
• Dislikes mixing foods and textures
• Refuses to lick stamps or envelopes due to taste
• Dislikes chewing gum or sucking on mints
• May only eat hot or cold foods (extreme temperatures)
• Avoids seasoned or spicy foods/prefers bland flavors
• May have difficulty with sucking as an infant
• May have chewing and swallowing difficulties
• Difficulty with changes in meal plans/prefers predictability

Gustatory/Oral Input: Symptoms of Under-Responsivity

• Doesn’t notice or care if foods are overly spicy or bland; may act as though all foods taste the same
• Excessive drooling past the teething age due to lack of oral awareness
• Unable to feel food that is in or around mouth
• Overstuffs mouth when eating
• Difficulty learning to use a straw
• Underactive gag reflex
• Unable to notice tastes and textures that others do, even if they are offensive
Gustatory Input: Symptoms of Sensory Craving

- Licks toys, walls or other non-edible surfaces
- Eats play-dough
- Craves flavor extremes
- Chews on shirt, fingers, pencils, straws or hair
- Bites finger nails
- Constantly puts toys in mouth after age 2
- Wants to chew gum all the time
- Loves condiments/can’t get enough ketchup, ranch dressing, salsa, etc.

- Bites other kids frequently
- Gnaws on furniture
- Adults are constantly telling the child who seeks gustatory/oral input:
  “Fingers out of your mouth”
  “Stop chewing on that”
  “Get that out of your mouth”
  “Stop biting that”
Olfactory Sense

- Smell travels to the limbic system (emotional part of the brain – this is why the smell of apple pie reminds us of grandma’s house)
- Taste and smell are closely tied together
- There are 5 tastes we can detect (salty, sweet, bitter, sour, savory) – any other flavor we detect is actually provided by the olfactory sense
- If you can’t smell, you can’t taste!
- If something smells bad, you can almost taste it!
Olfactory Input:
Symptoms of Over-Responsivity

• Unable to tolerate certain smells
• May have strong aversions to certain foods because of how they smell
• Extreme reactions to certain smells – may get physically ill/nauseated
• Often notices odors that other people don’t
• Is offended by cologne/perfume and scented lotion, soap, shaving cream
• May avoid certain people or places based on how they smell/may talk about it excessively

Olfactory Input:
Symptoms of Under-Responsivity

• Does not notice smells that others do, even if they are offensive
• Does not respond to unpleasant smells
• May eat or drink harmful or poisonous things due to inability to notice the noxious smell
• Unable to identify smells from spices or scratch ‘n sniff stickers
**Olfactory Input:**
Symptoms of Sensory Craving

- Craves certain smells
- Needs to smell new people, food and objects (everyone and everything)
- Smells food before eating it
- Smells toys during play time

**Tactile Sense**
Tactile Sense

- The tactile sense is the largest sensory system because skin is the largest organ in the body (total area of about 20 sq. feet)
- The skin contains sensory receptors for touch, temperature, pressure, and vibration
- “Every one of use, from infancy onward, needs steady tactile stimulation to keep us organized, functioning, and healthy.” - Carol Kranowitz, 2003

Tactile Input:
Symptoms of Over-Responsivity

- Dislikes tight fitting clothes (jeans, hats, turtlenecks, underwear, socks, belts, coats)
- May wear clothing not appropriate for the season, because child only wears loose-fitting clothes (sundress, no underwear, no coat and flip flops in the winter)
- Picky about clothing/dislikes certain fabrics
- Aversive to tags and seams in clothes
- As a toddler, may take clothes and diaper off
• Has difficulty transitioning from “winter clothes” to “summer clothes” (long sleeves to short sleeves, pants to shorts)
• Startles easily with light or unexpected touch (tactile defensiveness)
• Doesn’t like to be cuddled; resists affection; wipes off place where kissed
• Dislikes being hugged, but may give hugs (child doesn’t want touch to be imposed on him)
• Avoids group activities for fear of being touched or bumped into

• Avoids standing close to other people (hates lines)
• Excessively ticklish
• Overreacts to minor cuts, scrapes and mosquito bites
• Refuses to walk barefoot in the grass or sand
• Is bothered by the wind
• May toe walk to avoid having feet touch the surface
• Won’t leave band-aids on skin
• Is distressed by diaper changes
• Distressed by dirty hands – wants to wash them frequently
• Avoids using hands during play
• Dislikes messy play such as finger painting, playing with shaving cream or using glue
• Aversive to taking a shower (prefers baths)
• Dislikes having face washed
• Distressed by having nails clipped
• Is bothered by having hair brushed
• Strongly dislikes haircuts (may be physically impossible to take child to a barber/salon)
• Hates being buckled into the car seat

Tactile Input:
Symptoms of Under-Responsivity

• Lacks awareness of being touched or bumped
• Doesn’t seem to notice when being handled aggressively
• May dress inappropriately for the weather due to not noticing extremes in temperature
• May not notice if bath water is too hot or too cold
• Oblivious to hands or face being dirty or wet
• May not be aware that nose is running
• High pain tolerance/doesn’t cry when getting shots
• May not be bothered by wet or dirty diapers
• Unable to identify objects by touch alone
• Doesn’t notice scrapes and cuts
• Doesn’t notice when clothes (or chin) are wet
• Lacks awareness of whether clothes are on straight (looks disheveled most of the time)
• My have difficulty using tools such as pencils, scissors, eating utensils

**Tactile Input: Symptoms of Sensory Craving**

• Intrusively touches other people ("space invader")
• Explores surfaces or textures repeatedly by touching, rubbing, licking, squeezing, etc.
• Puts things in the mouth (past the developmental stage of oral exploration)
• May scratch or rub own skin excessively
• May engage in self-injurious behaviors (pinching, biting, banging head)
• Seeks out messy play
• May unknowingly be too rough with pets or younger children
• Craves vibration

Proprioceptive Sense
**Proprioceptive Sense**

- Sensory information comes through receptors in the muscles, joints, ligaments and tendons
- Allows you to know where your body is without having to look
- Have you ever felt disconnected from your own body?
- Let’s experience the proprioceptive sense...

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**Proprioceptive Input: Symptoms of Over-Responsivity**

Proprioceptive input is helpful to the nervous system, so we do not typically see over-responsivity in this sensory system.
Proprioceptive Input: Symptoms of Under-Responsivity

- Poor body awareness
- Doesn’t know where body is in space
- May have postural instability (trouble keeping muscles working when in a stable position)
- Difficulty maintaining posture; slumps when sitting in a chair or when seated on the floor; leans head on hands when working at a desk
- May not notice when limbs are stretched

Proprioceptive Input: Symptoms of Sensory Craving

- Seeks out constant input to muscles and joints
- High-impact jumping (gives the joints in the hips, knees and ankles a jolt)
- Flaps hands or arms excessively (gives the joints in the shoulders, elbows and wrists a jolt)
- Frequently cracks knuckles or neck
- Likes to crawl through tight spaces
- Walks on toes for increased input
- Likes clothes and shoelaces to be tight as possible
• Sleeps with lots of stuffed animals and blankets on the bed
• Loves heavy work/pushing, pulling or dragging heavy objects
• Likes heavy or weighted blankets/enjoys being wrapped up like a burrito
• Slams own body to the ground
• Always has something in mouth/chews constantly on pencils, straws, shirt
• Grinds teeth, crunches ice, bites hard candy instead of sucking on it (proprioceptive input to the jaw)

• Kicks, bites, hits, head bangs
• Loves to be squished
• Stomps feet when walking (has “heavy” feet)
• Enjoys bear hugs; may use too much pressure when giving hugs
• Excessively bangs on toys
• Seeks out wrestling and rough-housing types of interactions
• Hits, bumps or tackles other children (peers may be somewhat fearful of this child)
Difficulty Grading Movements

• Difficulty regulating pressure when writing/coloring
• Tears paper when erasing
• Breaks toys frequently, but unintentionally
• Misjudges weight of an object
• Difficulty discriminating between heavy and light
• Uses too much force for everything (squeezes the juice box too tightly, slams doors) or doesn’t use enough force (complains that things are too heavy)
• Is unintentionally too rough with pets

Vestibular Sense
Vestibular Sense

• This is the most powerful sensory system
• It is the internal GPS system of the body
• Tells us where we are in relation to the ground
• If this system is dysregulated, then the child will not feel safe and secure in his movements
• Located in the inner ear ("the vestibule" consists of the semicircular canals, the utricle, and the saccule)
• The vestibule is filled with fluid and as you move, lean or spin the fluid sends a message to your brain about how your body is positioned

• The vestibular sense detects movement changes related to gravity: sitting or standing, in motion or standing still, balanced or off-balance, upright or horizontal, moving forward or backward, walking or running, right side up or upside down; also detects if we are in a safe, relaxing place or in danger
• Associated with safety, survival, arousal, and attention
• Important for the development of balance, orientation, coordination, eye control, attention, security in movement, and some aspects of speech and language
Vestibular Input: Symptoms of Over-Responsivity

• Has gravitational insecurity/fearful of feet leaving the ground
• Dislikes playground equipment that involves movement (slides, swings, teeter totter)
• May be fearful of going up and down stairs/ladders
• Is uncomfortable in elevators and escalators (may try to sit down on them)
• Over-responds to ordinary movements (appears terrified); physically clings to caregiver

• Fearful of heights, even a curb or a step
• Fearful of transitioning from one surface to another (sidewalk to grass; grass to mulch; carpet to tile)
• May have a shuffled gait (in order to keep both feet on the ground)
• Dislikes inversion (being upside down)
• Resists tilting head back to have hair washed
• Startles if someone else moves them (parent picks child up and lays him on the changing table; teacher comes from behind and pushes child’s chair up to the desk)
• May have disliked tummy time as an infant
• Disliked being tossed in the air as a baby
• Loses balance easily
• Difficulty riding a bike, hopping, balancing on one foot, walking on a balance beam
• Dislikes leaning back to have hair washed
• Fearful of doing the back float in the pool
• Unwilling to dive head first into the pool
• Prefers to keep head in one position (dislikes head movement - alternating looking up and down)

• Dislikes gymnastics (somersaults, cartwheels)
• Described as clumsy, trips frequently
• Becomes easily dizzy or nauseous (motion sickness)
• Dislikes moving with eyes closed
• Is overly cautious; does not like to take risks during play (other kids may call him “wimpy” or tease him for being a “sissy”)
• At times may appear to be willfully uncooperative or manipulative (this is a fight or flight response resulting from fear)
**Vestibular Input:**
**Symptoms of Under-Responsivity**

- Little desire to move and explore environment
- Has low muscle tone, appears loose and floppy
- Fatigues easily
- Limited participation in P.E. class and sports
- Doesn’t protect self well during a fall
- Slumps when sitting in chair; supports head with hand when sitting at table or desk; leans on the wall for support when standing or sitting
- Sits with legs in “w” position or prop sits

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**Vestibular Sense:**
**Symptoms of Sensory Craving**

- Seeks intense movement in all directions and angles (the faster the better)
- Loves to jump, spin, skip and roll excessively, without getting dizzy
- Delights in being upside down
- Loves roller coasters and other thrilling rides
- Likes to jump from high heights/climbs up wrong side of high staircase
- Loves being thrown in the air
• Is a thrill seeker
• Craves roughhousing, wrestling and play fighting
• Has spurts of impulsive running
• Can repeat certain movements endlessly just for the sensation it provides
• Needed to be rocked excessively as a baby; was happiest in the swing or bouncer or when riding in the car
• Rocks body front to back or side to side repeatedly
• As movement increases, child becomes more and more disorganized

• Gets little to no information about how high, how fast or how far she is going so there appears to be “no fear”
• Jumps on bed, couch or trampoline endlessly
• Seeks out balancing activities
Interoceptive Sense

- This is the “How do you feel?” sense
- Tells you about the physiological condition of your body:
  - Pain
  - Sickness
  - Temperature
  - Itch
  - Thirst and hunger
  - Breathlessness
  - Breathlessness
  - Pounding heart
  - Need to use the bathroom
Interoceptive Input: Symptoms of Over-Responsivity

- May be preoccupied with internal sensations, causing child to become distressed or highly distracted
- Bodily sensations may cause over-reactions such as fear or pain (i.e. hunger interpreted as pain)
- Frequently complains of non-specific discomfort
- May avoid using the restroom due to anticipation of pain associated with bowel movements
- Problems regulating body temperature
- These children may have meltdowns for no apparent reason (reacting to intense internal sensations)

Interoceptive Input: Symptoms of Under-Responsivity

- Child may not feel or respond to the body’s signals appropriately or in a timely manner (not getting enough information from within his own body)
- May not experience pain, nausea, hunger, thirst, fullness
- Slow to potty train
- Difficulty sensing need to use the restroom – may have frequent “accidents” (incontinence, enuresis)
- Doesn’t notice a pounding heartbeat
- May not sense changes in body temperature
Seeking Interoceptive Input

- Child may be in constant motion because he is seeking a pounding heartbeat and fast respiration
- Hunger and thirst sensations might feel good so eating and drinking is purposefully limited

Sensory Activities
• Children with Sensory Processing Disorder need Occupational Therapy

• However, we all can help these child get neurologically organized during daily activities and routines

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**General Strategies for Home and Classroom**

• Children need to interact with sensitive play partners who can guide the exploratory play process and help them feel safe

• We need to offer multi-sensory experiences to facilitate development

• Select strategies and activities that will help the child achieve a ready state for learning

• Some children need alerting activities and some need calming activities, but the most important thing young children need is movement and play
### Alerting Input

- Jerky movements
- Fast movements/speech
- Side to side movement
  - Inversion
  - Unexpected
- Bright, fluorescent or flashing lights
- Upbeat music

### Calming Input

- Rhythmic movements
- Slow and steady movements/speech
- Linear movement
- Eyes right with horizon
  - Familiar
- Soft, natural lighting/dimly lit rooms
- Slower paced music

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### Alerting Input

- Loud sounds/voices
- Cold or changing temperatures
- Rough texture
- Strong odors
- Bright colors
- Pokey or prickly
- Bold, bright, colorful, busy background stimuli

### Calming Input

- Quiet sounds/voices
- Warm/neutral temperatures
- Smooth texture
  - Mild odors
  - Muted colors
- Joint compression, slow stretches, deep pressure, heavy work
- Limited background stimuli
The Big 3

• According to Dr. Ayres, the tactile, proprioceptive and vestibular senses are the “Big 3” for kids with sensory processing disorder

• The other senses can’t work properly if the Big 3 aren’t doing their job

• “The proprioceptive sense and vestibular sense work with the touch sense to lay the foundation for the development of the other senses.”
  -Tara Delaney, OTR/L

Tactile Activities

• If child is tactiley defensive, approach him from the front and avoid light touches

• Introduce dry, non-messy play such as beans, rice, bird seed, sand, lentils

• Water play in the sink or tub; “paint” the deck/fence using a large paintbrush and a bucket of water

• Create with play-dough, clay, Silly Putty, sand

• Explore messy play with finger paint, shaving cream, pudding, whipped cream (can put in plastic bag)

• Offer different textured containers to scoop/pour
• Playing with a pin toy
• Having child identify objects by touch from inside Ned’s Head (game is called “What’s in Ned’s Head?”)

• Make edible jewelry by stringing cereal or popcorn
• Baking/food play that requires kneading & pulling
• Offer deep pressure, weighted blankets or vests, weighted backpacks
• Allow child to sit on outside of circle so nobody sits directly behind him or her
• Offer a carpet square to help define personal space
• Encourage child to discriminate among different textures by feeling and describing the objects (hard/soft, bumpy/smooth, wet/dry, cold/warm, heavy/light, etc.)
• Make forts and secret hideaways using pillows, blankets, comforters
• Outdoor activities such as collecting bugs, catching lightning bugs, digging in the garden, pulling weeds, collecting acorns and pine cones
• Taking care of a pet: brushing a dog, petting a kitten or snuggling a guinea pig

• Make a “baby burrito” by rolling the child up in a blanket
• Make a sandwich with the child in between two couch cushions and “spread” mustard or mayonnaise on child’s extended arms and legs with a brush or washcloth
• Give child a firm back rub
• Play dress up with a variety of hats, shoes, gloves, feathery boas, and silk scarves
• Decorating cardboard boxes with paint, markers, stickers, or tape

• Create a tactile path: place a variety of different textured items for child to step upon (soft rug, bubble wrap, sandpaper, satin, carpet square, foam egg crate, cardboard, bathmat, fake grass mat, etc.)

What the Experts say about Vestibular Activities

• “...the vestibular sense is our most primal and powerful sense and therefore the one we must address with the highest caution. We must never impose vestibular experiences under any circumstance.”
  - Carol Kranowitz, 2003

• “...any vestibular activity should be undertaken carefully, and only for short periods of time at first, until the child builds a greater tolerance for the sensation...keep a close eye on any overreactions by the child (nausea, change in pallor, excessive sweating), which are indications to cease the activity.”
  - Melanie Hawke, OTR
Vestibular Activities

• Jumping on the bed or trampoline ("jumping improves rhythm and helps regulate the nervous system", - C. Kranowitz, 2003)
• Walking on uneven surfaces such as a sandy beach, a playground bridge, a meadow, a shallow pool of water, rocky terrain, on mulch
• Sitting in a rocking chair for rhythmic movement
• Sitting on a ball instead of a chair
• Going up and down stairs
• Doing somersaults, rolling down a hill

• Giving piggy back rides
• Having child swing on her tummy
• Rolling on a peanut ball (or a bolster type pillow)
• Playing on a teeter-totter
• Sitting on a T-Stool
• Spinning in an office chair
• Rolling across the floor
• Spinning on a tire swing
• Ring Around the Rosy
• Riding on a scooter board
• Playing on a sit-n-spin
• Swinging (swing, hammock, blanket)
• Hanging upside down

• Hopping on a ball with a handle
• Spinning on a merry-go-round
• Bouncing child on your knee
• Stand child on your lap while holding her hands
• Sliding in a variety of positions: lying down on back feet first/head first, lying down on tummy feet first/head first, sitting up forward/backward
• Walking on stone walls or landscaping railroad ties
• Pulling child around on a blanket (works best on hardwood floors or linoleum)
• Singing “Row, Row, Row your Boat” while rocking back and forth with a partner

Row, row, row your boat
Down the jungle stream
If you meet a crocodile
Don’t forget to scream!
“AAAAHHHHH”
Row, row, row your boat
Gently bac to shore
If you meet a lion
Don’t forget to roar!
“ROAAAAARRRR”

• Riding on a rocking horse
• Balancing on a rocking board
• Playing on a Bilibo

• Fill socks with dry soup beans, rice or sand and have child walk on them
• Playing airplane or horsey

• Balancing activities
Proprioceptive Activities

• Heavy work (involves moving against resistance) such as moving telephone book steps, carrying heavy groceries, pulling a loaded wagon, pushing a stroller

• Holding up the wall
• Sweeping, digging, raking or shoveling
• Hanging by arms on chin up bar or monkey bars
• Offering joint squeezes/joint compressions (this can be calming when stuck in tight places)
• Playing tug of war (can use a dog toy)
• Wearing a “onesie” or undershirt that is 1-2 sizes too small (feels like a hug)
• Pounding golf tees into sturdy Styrofoam
• Climbing in and out of a pool float

• Wheelbarrow walk
• Body squeezes
• Opening heavy doors
• Tearing paper
• Roughhousing/wrestling
• Arm wrestling
• Playing leapfrog
• Playing with a weighted ball
• Pouring different consistencies
• Bowling
• Crashing into pillows or beanbag chairs
• Climbing the wrong way up a slide
• Jumping on a trampoline
• Pushing the trashcan to the curb
• Crawling around on the floor during play time
• Giving bear hugs
• Pulling small beads out of clay or Thera-Putty
• Doing Yoga stretches
• Jumping over a rope

• Pulling around a small wheeled suitcase
• Doing the army crawl
• Carrying a watering can around the yard to water the flowers
• Kneading play-dough
• Giving massages
• Having pillow fights
• Doing the crab walk
• Rearranging furniture
• Opening and holding doors for other people
• Putting together Pop Beads and then pulling them apart
• Wearing a body sock
• Pushing a friend in a laundry basket

Strategies for the Oral Seeker
(kids who put everything in their mouth)
• Sip drinks through silly straws or coffee stirrers
• Suck milkshakes or applesauce through a straw at snack time
• Eat chewy foods such as gummy bears, bagels, licorice, beef jerky
• Chew gum
• Offer cold foods such as popsicles, ice chips, frozen grapes, slushies to drink
• Try carbonated beverages (such as sparkling water)
• Offer high intensity flavors such as salsa, Hot ‘n Spicy Cheez-Its, jalapeno flavored chips, Hot Tamales, black licorice
• Eat sour snacks such as sour gummy worms, oranges, lemons
• Eat thick crunchy foods such as Dutch pretzels, raw veggies, granola
• Incorporate mouth toys into play (whistles, kazooos, blowing bubbles, blowing up balloons, blowing a pinwheel, blowing cotton balls across a table with a straw, etc.)

For Inappropriate and Excessive Chewing

Offer child a “Biter Bucket” filled with objects that are allowed to go in the mouth:
• Chewelry
• Ps & Qs
• Vibrating toothbrush
• Icemaker tubing
• Washcloth

Block and redirect the child to the biter bucket when inappropriate mouthing occurs
Thank you for coming!

References

Books:
• Heller, Sharon (2002). *Too Loud Too Bright Too Fast Too Tight*.
• Kranowitz, Carol (2003). *The Out-of-Sync Child has Fun*.

Websites:
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• www.sensory-processing-disorder.com