

# Sensory Processing Disorder: An Overview for Caregivers

Presented By



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# Objectives

- Understand how to identify sensory processing disorder
- Understand and recognize the signs and behaviors associated with sensory processing differences
- Understand the unique sensory needs and challenges of a child with sensory processing differences
- Understand the use and significance of implementing sensory based activities into daily routines
- Demonstrate the use of a variety of sensory strategies

# SPD Defined

- *Sensory Processing Disorder* (SPD, formerly known as "sensory integration dysfunction") is a condition that exists when sensory signals *don't* get organized into appropriate responses. A person with SPD finds it difficult to process and act upon information received through the senses, which creates challenges in performing countless everyday tasks. Motor clumsiness, behavioral problems, anxiety, depression, school failure, and other impacts may result if the disorder is not treated effectively.

-SPD Foundation

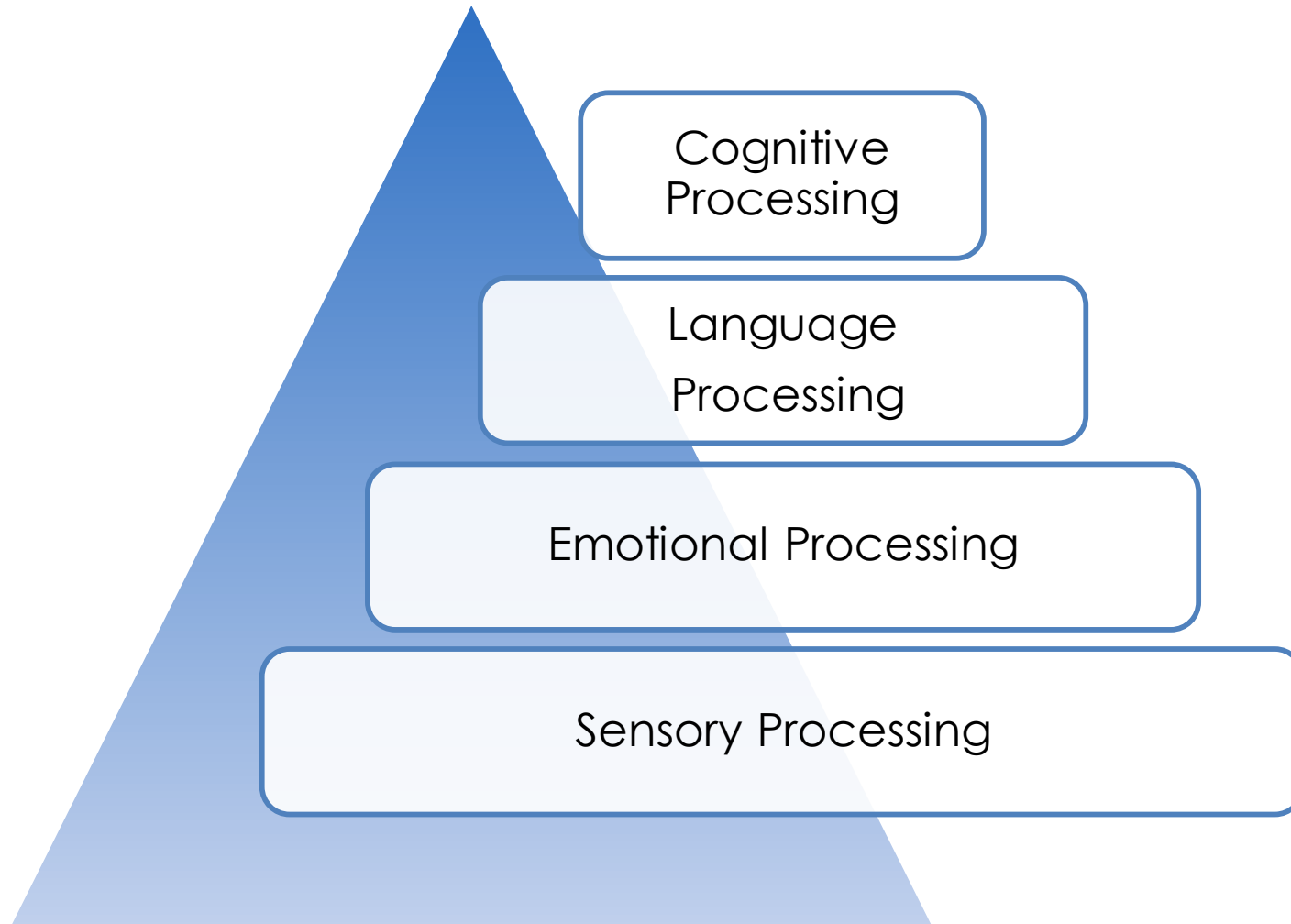
# Sensory Integration...

- This concept originated out of the work of A. Jean Ayers
- Her focus was on the role of sensory processing in child development
- Proximal senses – vestibular, tactile, and proprioceptive senses
- Distal senses – vision and hearing
- First defined sensory integration as “the organization of sensation for use”

# Sensory Integration...

- Is an unconscious process of the brain
- Organizes information detected by the senses
- Gives meaning to what is experienced by sifting through all the incoming information and prioritizing what to focus on
- Allows us to act on or respond to the situation we are experiencing in a purposeful manner
- Forms the underlying foundation for academic learning and social behavior

# Sensory Processing Hierarchy



# Putting the pieces together...

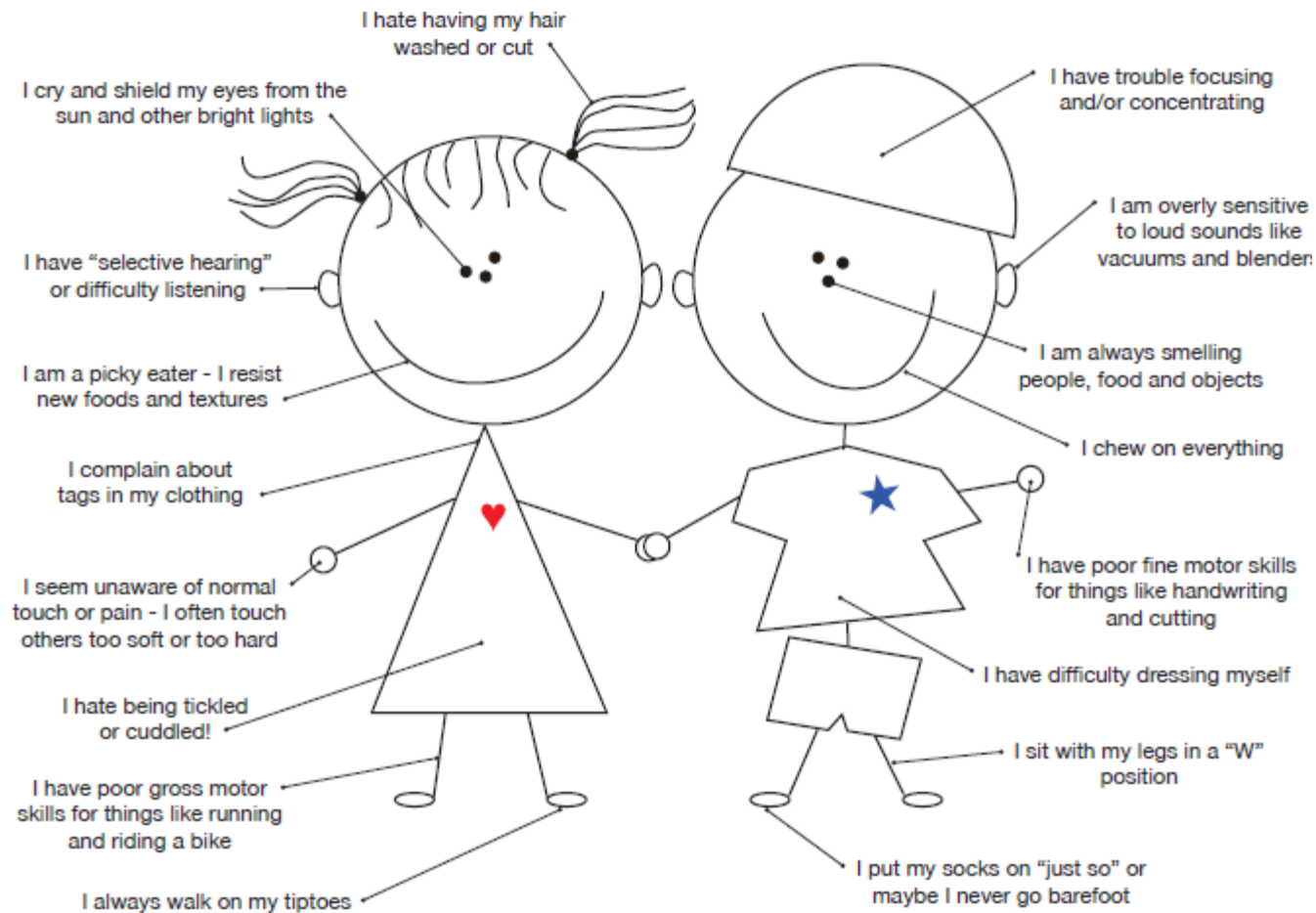
- Eating an orange
  - Use your eyes, nose, mouth, the skin on your hands and fingers, muscles, joints, and tendons inside your fingers, hands, and arms, and your mouth
  - Sensory integration: all the sensory information comes together to allow us to peel, eat, and enjoy the act of eating an orange

# Poor Sensory Integration

- Sensory integration disorder/dysfunction
- Sensory processing disorder/dysfunction
- No one organizes sensations perfectly
- Poor sensory integration may interfere with many aspects of daily life
- There is no diagnosis code for sensory processing “disorder” but it is widely accepted among pediatric professionals.



# DO YOU KNOW ME?



# Sensory Processing Disorder and Down Syndrome

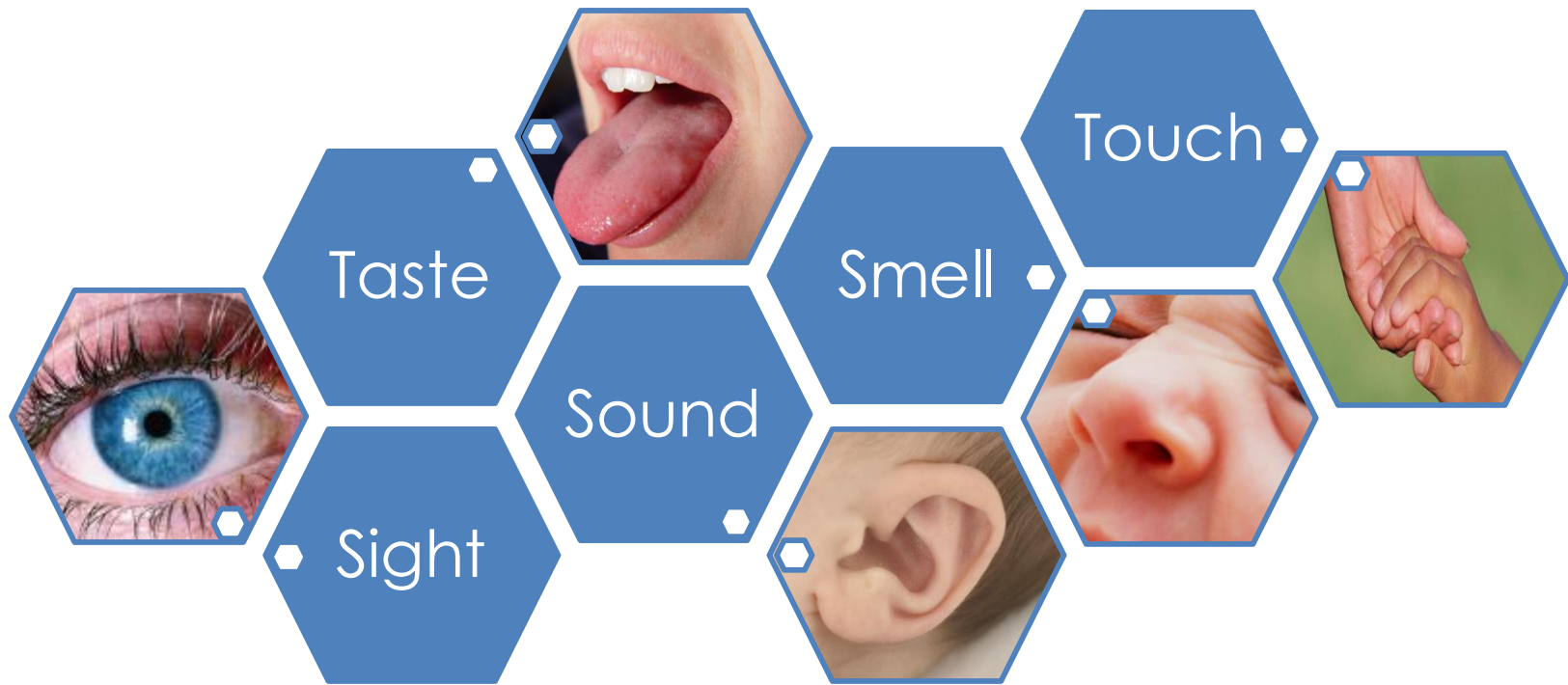
- Research in 2010, with children ages 3-10 years old, indicated that 49% of children with a diagnosis of Down Syndrome registered in the definite difference category for the Sensory Profile.
- Highest rates of probable and definite difference were in the low energy/weak, underresponsive/seeking sensation, and auditory filtering subsections of the Sensory Profile.

# Sensory Processing Disorder and Down Syndrome

- There is little research on the dual diagnosis of Down Syndrome and Autism but estimates are between 1-10%.
- Sensory processing differences are part of the diagnostic criteria for Autism.

# The 5 Senses

- Exteroceptors – sensations that tell us what is going on outside of the body



# Beyond the 5 Senses

- Proprioceptors – sensations that tell us where the body is in space and how it is moving
  - Proprioception – position and movement, movement and position of muscle, tendons, and joints
  - Vestibular sense – gravity, head movement, and balance



# Hypersensitivity

- Sensations are registered too intensely
- Sensory information is overstimulating and can be irritating, annoying, or threatening
- Unable to screen relevant information
- Highly distractible
- May overreact or be particularly upset by clothing, noise, light touch, bright lights
- May resist movement activities and play cautiously, avoid swings, escalators, elevators, and other activities where feet leave the ground

# Hyposensitivity

- Registers sensations less intensely than normal
- Does not get enough input to process sensory information accurately
- May seek extra input or be passive and sluggish
- May not notice minor injuries, may seek extra tactile input through touch
- May seek out and enjoy strong flavors and a variety of textures
- May not notice quiet sounds or be able to discern where a sound is coming from
- May prefer extreme movement, be risk-takers/thrill-seekers/no fear of injury



# Combination

## Hypo-Hypersensitivity

- Oversensitive in some ways and under sensitive in others
- Poor modulation resulting in poor sensory responses and awareness
- May seek certain input at times and avoid it at others, and may be dependent on time of day, be activity or environment based
- Can vary with each day, during each day, or with each activity
- ADHD/ADD diagnosis is common



# Signs of SPD - Auditory

- Under-responsive:
  - Hums or makes other noises constantly
  - Misses oral instructions more often than other students
  - Appears to ignore you frequently
  - Seems oblivious within an active environment
- Over-responsive:
  - Avoidance behaviors before he/she has to go to Music, PE, or lunch
  - Comments about the fire engine or plane outside that no one else has noticed
  - Overly scared of fire alarm during fire drills
  - Frequently tells others to be quiet

# Auditory Treatment Ideas

- Earplugs
- Headphones without the music or with white noise
- Preparation and planning for fire alarms and noisy activities
- Gradual exposure to louder items
- Quiet place to retreat to when environments or activities are loud
- Using an auditory/listening program at home and school
- Forbrain®

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# Signs of SPD - Visual

- Under-responsive:
  - Stares intensely at others
  - Misses written or demonstrated directions more than other students
  - Gets “off track” when filling in a busy worksheet
- Over-responsive:
  - Avoids eye contact
  - Hides under desk during transitions or “busy” times in the room
  - Complains of headache, especially when trying to copy from the board
  - Easily distracted by movement in the hall or out the window
  - Can't pay attention when in a room with lots of movement going on or lots of decorations on the walls

# Visual Treatment Ideas

- Templates to help with homework
- Leave extra spaces when writing
- Highlighted lines
- Decrease visual distractions in environment
- No fluorescent lights
- Soft paint colors
- Bright paper taped to desk



# Visual Treatment Ideas

- Make accommodations as necessary
  - Tinted lenses/sunglasses
  - Dim lighting
  - Direct vs. indirect light
  - White vs. pastel paper
  - Work in a distraction free room (clear walls, covered windows)
  - Visually organize the workspace
  - Provide visual/picture schedule
  - Limit time spent watching TV/movies and/or playing computer or video games
  - Try using visual sensory toys

# Signs of SPD - Tactile

- Under-responsive:
  - Touches other children when standing in line
  - Fidgets with small objects
  - Gets into other people's space when talking to them
  - Doesn't notice when face or hands are messy
- Over-responsive:
  - Gets extremely upset when hands are messy
  - Does not hold paper down when writing
  - Refuses to hold items with different textures
  - Easily upset by minor injuries (bumps, scratches, etc.)
  - Flinches when people get in close proximity to him/her

# Tactile Treatment Ideas

- Provide opportunities for tactile play
  - Play-doh
  - Shaving cream
  - Finger paints (also try pudding, peanut butter, ketchup, etc.)
  - Food play (mixing with hands, making bread/cookies, etc.)
  - Bean/rice/noodles/pea play boxes (hide puzzle or game pieces)
  - Sand/water tables
  - Insta-sno
  - Gak/slime/hair gel/liquid soap



# Tactile Treatment Ideas

- “Feelie” box
- Body brushing program
- Fabric swatches
- Remove tags from clothing
- Turn socks inside out



**Walking over different textures such as Easter grass, fabric or carpet squares, sand, etc.**



**Shaving cream, pudding, hair gel, and finger paint play are great tactile experiences**

# Signs of SPD - Vestibular

- Under-responsive:
  - Wiggles in chair constantly
  - Bumps into desks when walking through the room
  - “Busy” or “on the go” all the time
  - Falls frequently
  - Shakes head frequently
  - Climbs on furniture
  - Hangs head upside down
- Over-responsive:
  - Hesitant to participate in active or fast games/activities
  - Intentionally withdraws from active environments or situations
  - Doesn't play on playground equipment, especially swings
  - Moves slowly and cautiously
  - Holds head/neck very stiffly

# Vestibular Treatment Ideas

- Sitting on exercise ball
- Swing inside or outside
- Slide
- Jumping
- Animal Walks
- Rocking
- Move n sit cushions
- Head upside down betw



# Vestibular Treatment Ideas Continued...

- Swings
- Scooter board
- Trampoline
- Rocking chair
- Sit n spin
- Bicycle
- Car rides
- Wagon rides
- Walking on dynamic surfaces (pillow, mattresses)
- Running
- Therapy balls

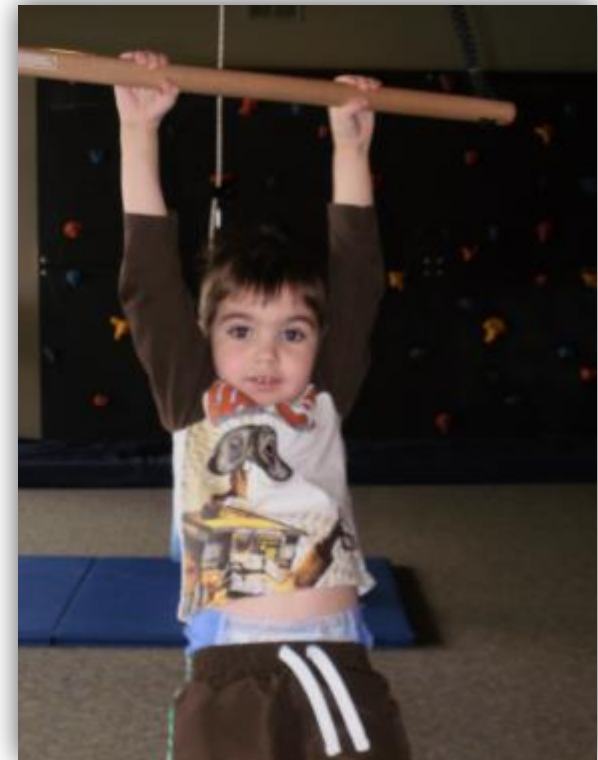


# Signs of SPD - Proprioceptive

- Under-responsive:
  - Sits on other children by accident when trying to sit on the floor
  - Trips over own feet frequently
  - Seeks out rough and tumble play
  - Pushes too hard through pencil
  - Frequently rips paper when trying to write or erase
  - Seeks out hugs
  - Does not seem aware of own strength
  - Sprawls across chairs and/or slouches
- Over-responsive
  - Does not push hard enough through pencil when writing
  - Does not climb on playground equipment due to apparent fear of heights
  - Moves arms and legs slowly or stiffly
  - Hesitant to participate in physical games

# Proprioceptive Treatment Ideas

- Hanging from monkey or pull up bar
- Crash into pillows
- Carrying, pushing & pulling heavy items
- Theraband exercises
- Body brushing program
- Pushing/pulling heavy items
- Yoga poses
- Swimming
- Weighted vest, lap pad, or blanket





# Proprioceptive Treatment Ideas Continued...

- Wrist and/or ankle weights
- Climbing
- Jumping
- Animal walks
- Crawling over dynamic surfaces
- Cuddle/hug vests
- Tug of war
- Bear hugs
- Wall/chair push ups
- Weighted vests and/or lap pads
- Hermit crab” – let your child crawl around with a heavy backpack



Walking over a dynamic Surface



Crawling over a dynamic surface



## Proprioceptive Activities Cont.

# Signs of SPD - Olfactory

- Under-responsive:
  - Brings objects to nose repeatedly
  - Doesn't notice strong self body odors when others do
  - Sniffs people when in line
- Over-responsive:
  - Easily distracted when lunch is being prepared
  - Expresses distress before and/or refuses to go to cafeteria
  - Comments on teacher's perfume to the point of distraction
  - Complains of headache on the bus or bathroom
  - Can't concentrate when near strong perfumes
  - Gags when entering cafeteria at lunch time

# Olfactory Treatment Ideas

- Unscented lotions, deodorant, laundry soap, shampoo, cleaning supplies
- Use an oscillating fan in work area
- Give child their own fan to control bad smells
- Practice smelling different smells
  - Start with mild smells and move towards more intense smells
  - Spicy vs. sweet
  - Talk through the smells with kids



# Olfactory Treatment Ideas

- Be aware of smells that are distracting or irritating and prepare and plan in advance for environments with strong smells (restaurants, doctor's offices, zoo, etc.)
- Don't wear scented lotions, perfumes, or any other strongly scented products
- Provide "smelling play time" that is appropriate for kids that need the input
- Work together to make a "smelling kit"
- Use oil diffusers in home, or personal diffusers that can be worn

# Signs of SPD - Oral

- Under-responsive:
  - Wet ring around sleeve or collar constantly
  - Bites fingernails
  - Puts non-food items in mouth
  - Always asks for gum or candy
  - Chews loudly
  - Does not react to strong tastes like other children
- Over-responsive:
  - Expresses distress during health check-ups
  - VERY picky eater
  - Gags on certain foods
  - Avoids strong tastes or extreme temperatures
  - Gags when brushing teeth



# Oral Treatment Ideas

- Sucking on hard candy, peanut butter, or other items
- “Drinking” pudding, applesauce, or a thick milkshake through a straw
- Chewy items (granola bar, licorice, bagels, etc...)
- Crunchy and/or strong flavored foods
- Chewing gum
- Blowing bubbles, whistles, spinners
- Oral brushing program
- Oral fidgets, Chewlery
- Sequential Oral Sensory (SOS) Feeding Program



# Treatment of SPD

- Guiding Principles
  - Focus on sensory aspects of activities
  - Therapy is grounded in play and child's interests and choices should guide activity selection
  - “Just right” challenge
  - Effectiveness is measured by increases in tolerance and improved responses
  - Progress may be slow, important to recognize and appreciate small changes



# Sensory Integration Therapy

- Working with a child in an environment with equipment used to stimulate and challenge all of the senses
- Provide a foundation of tactile, proprioceptive, and vestibular sensory activities
- Goal of therapy is to neurologically change and improve the ability of the brain to process sensory information

# Structured Sensory Programming

- A sensory diet – sensory based home program
- Designing a set of activities to meet the child's specific sensory needs in order to facilitate improved performance
- Child engages in sensory activities throughout the day for short sessions ideally before learning activities/tasks
- All sensory systems are engaged
- Builds on previously learned adaptive responses
- Typical child's play activities

# Treatment Planning

- Initiate foundational sensory activities and carefully track child's responses
  - Vestibular, tactile, and proprioceptive activities are powerful
- Address child's specific sensory issues individually
  - Oral, auditory, specific behaviors, etc.
- Work closely with family for goal setting and home programming

# Supplements to Traditional SI Therapy

- Astronaut Training
- Core Strengthening
- Listening Programs
  - Therapeutic Listening
  - The Listening Program
  - The Samonas Method
- Feeding Programs
  - SOS Approach

# Basics

- You are the “detective” and need to follow the clues
- Every child is unique and their needs change constantly
- Let the child guide you and learn to recognize their sensory needs
- Provide structure, consistency, and the “just right” challenge in sensory programming
- Be patient as you put your child’s puzzle together
- Celebrate and recognize small steps

# Miscellaneous Recommendations

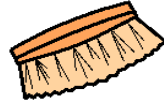
- Have a structured daily routine and make it a priority to stick to it
- Organizational supports – find and ask for help
- Take routine sensory breaks – make them a regular part of each day and activity
- Sensory input and activity is good for ALL kids – include siblings and friends, involve the whole family

# My engine is not ready, I need to...

Jump



Brush



Crab walk



Drink applesauce



Snake crawl



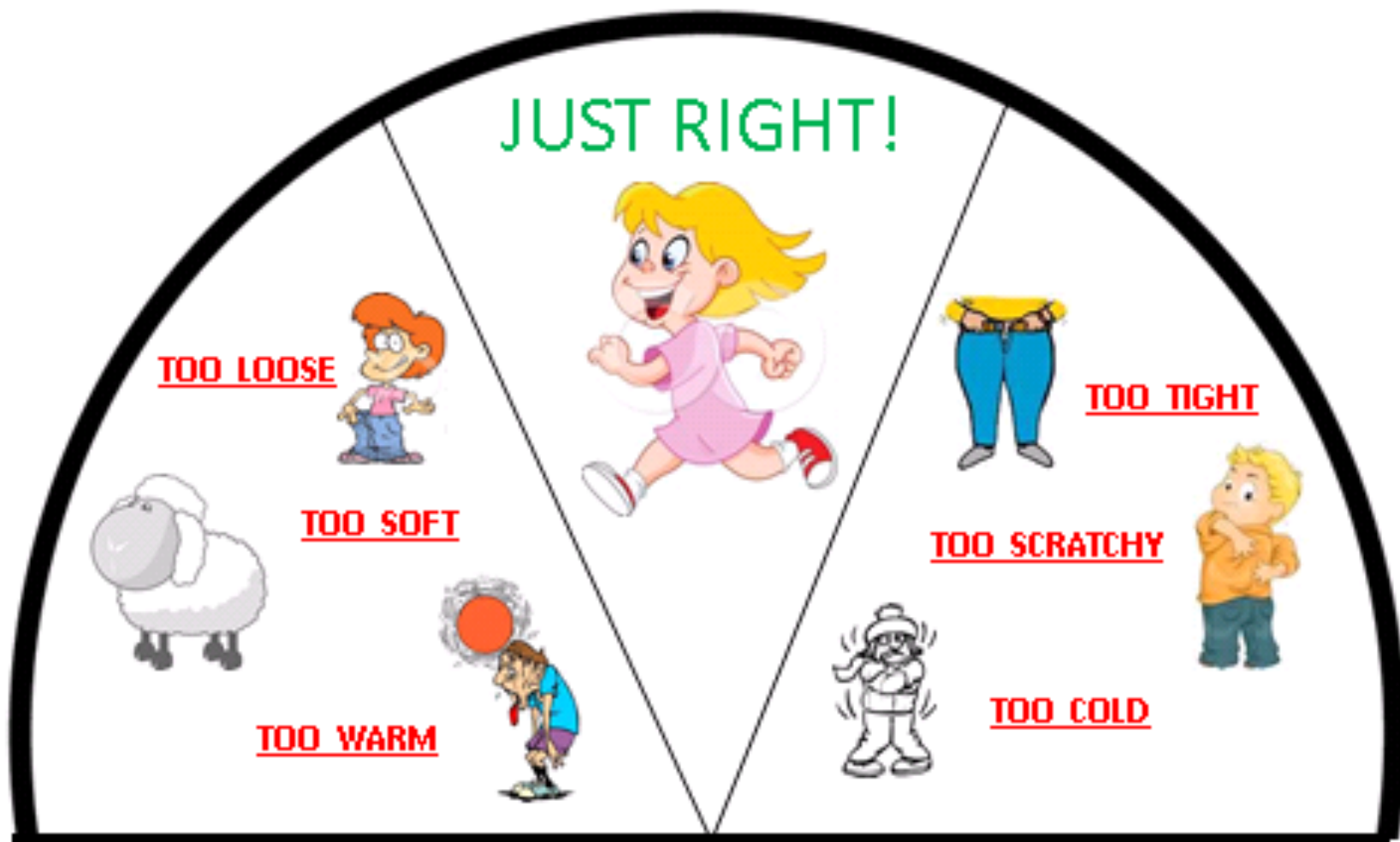
Putty



Lotion



# My Clothes Feel:





# My clothes do not feel right. I need to:



**Sensory Bin**



**Animal Walks**



**Brushing**



**Put Clothes in Dryer**



**Chew Gum or Candy**



**Carry Heavy Items**

# Resources & References

- Ayres, J.A. (2005). *Sensory Integration and the Child*.
- Biel, L. (2010). *Raising a Sensory Smart Child: From Infancy to Adulthood*
- Hanschu, B. (2004). *Autism/Environments: A Sensory Perspective*. Williams, M.S. and Shellenberger, S (1992). *“How Does Your Engine Run: A Leader’s Guide to the Alert Program for Self-Regulation*.
- Heller, S. (2002). *Too Loud, Too Bright, Too Fast, Too Tight: What to do if you are sensory defensive in an overstimulating world*.
- Kranowitz, C.S. (1998). *The Out-of-Sync Child: Recognizing and Coping with Sensory Integration Dysfunction*.
- Smith, K.A.(2005).*The Sensory Sensitive Child: Practical Solutions for Out-of-Bounds Behavior*.
- [www.spdfoundation.net](http://www.spdfoundation.net)
- [www.spdnetwork.org](http://www.spdnetwork.org)
- [www.sensorysmarts.com](http://www.sensorysmarts.com)