Sensory Integration: An Introduction for Parents

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Learning Objectives

- Identify and define the sensory systems of the human body.
- Review key tenets of sensory integration theory.
- Explore sensory strategies and tools to utilize in your home.
- Develop plans for implementing a sensory diet for your child.
The Eight Senses

- Tactile
- Visual
- Auditory
- Gustatory
- Olfactory
- Vestibular
- Proprioceptive
- Visceral or Interoceptive
Definitions

• Vestibular system:

• Proprioceptive system:

• Interoceptive system:
What does sensory input do to your body?

- The Brain and Nervous System.
- It filters and processes every signal we receive from our environment.
- When sensory integration difficulties exist, there is a pathology in the way the brain is able to process this information.
Input/Output

Sensory Input ➔ Brain ➔ Adapted Response
Spotlight on the Proprioceptive System:

- Brings our body together and helps with *praxis*, motor planning and body awareness.
  - “The ability to have an idea and plan about a future novel activity that involves deciding what to do and how to do it” (Kuhaneck & Watling, 2010).
- Poor praxis may result in limited play skills, difficulty initiating movement, difficulty engaging and developing self help skills, and even prompt dependency.
- DUAL EFFECT.
Hyper(Over)Responsiveness vs. Hypo(Under)Responsiveness

• Sensory-avoiding vs. Sensory-seeking patterns.
Over-Responsiveness

Avoiding Behaviors, “Low Threshold”:
• Covers ears with loud noises.
• Becomes upset when touched or moved.
• Avoids weight-bearing positions or activities including crawling, rolling, climbing, jumping, hopping, etc.
• Avoids novel situations: new environments, foods, etc.
Under-Responsiveness

Seeking Behaviors, “High Threshold”:
• Mouthing/chewing non-food objects.
• Contorts body into strange positions.
• Crashes/falls purposefully.
• Difficulty grading strength, motor control.
• Squeezes self into tight or dark spaces.
• Looks for other sources of deep pressure: excessive hugs, body squishes.
General observations with your child:

- Difficulty “listening” and sitting still.
- Difficulty engaging with motor activities.
- Difficulty coping with loud noises.
- Anxiety with transitions.
- Resistance to wearing different clothing. Bothered by tags, seams, etc.
- Food aversions and feeding difficulties.
- Resistance to self care activities (bathing, dressing, grooming).
General observations (cont’d):

- Low body awareness: clumsiness, bumping, crashing, low regard for personal space.
- Difficulty with motor planning complex and multi-step activities.
- An excessive need/want to move, walk, run, jump, crash, or spin.
- Flight-or-flight responses (crying, aggression, eloping, etc.) with challenging activities.
What your child may be experiencing:

Difficulties with:

- Processing Input:
  - Tactile
  - Vestibular
  - Proprioceptive
  - Auditory
- **Regulation**: the ability of the brain to organize sensory stimuli from the environment and maintain physiological homeostasis.
  - Over-reaction
  - Under-reaction or Low Registration
Sensory Integration at a Glance

• Theory: Vestibular and proprioception are key sensations in development and function (Kuhaneck & Watling, 2010).
  • The exteroceptive system alone is not enough!
  • Multisensory approach allows for cortical growth and learning.
• The right amount of the right input to maintain an optimal “level of arousal.”
• Target at least 2 of 3 systems to provide optimal sensory input (Kimball, 2013).
  • Vestibular, proprioceptive, tactile
So, what should we do?

- Think about a Sensory Diet and providing regular breaks for movement.
- Desensitization and exposure to novel experiences.
- Exercise (Baranek, 2002).
  - Movement is the key! The right kind of movement provides proprioceptive and vestibular input to regulate our bodies.
What is a Sensory Diet?

• Similar to a regular diet that provides us with sustenance and nutrients throughout the day, a sensory diet provides us with needed input throughout the day to support optimal arousal... or our “neurological happy place.”
• Sensory Meals vs. Sensory Snacks
Your Responsibility

- Embedding opportunities for Sensory “Meals” and “Snacks” throughout the day.
- Make it Fun!
  - Do activities in your house and in the community.
- Make it Routine!
  - Daily activities to provide child with needed input.
Sensory Interventions

- Utilize multiple of the following sensory systems in movement activities:
  - Vestibular
  - Proprioceptive
  - Tactile
- Alerting and Calming Activities.
  - Don’t forget: Proprioception does BOTH!
- Teaching Self-Awareness
  - How Does Your Engine Run?
Alerting Input

- **Vestibular:**
  - Rotary or Orbital movement.
  - Bouncing.
  - Any movement that is fast, irregular, or unpredictable.

- **Auditory:**
  - Loud, abrupt noise.
  - Music with fast tempo.
  - Increased verbal input (room full of people).

- **Tactile/Gustatory:**
  - Light touch or stroking, tickling.
  - Cold temperatures.
  - Strong flavors: sour, spicy, sweet.
Calming Input

• **Vestibular:**
  - Inversion: downward dog, handstand, hanging upside down.
  - Linear swinging (back/forth, side-to-side).
  - Slow rocking in a swing, rocking chair, or over a therapy ball.

• **Auditory:**
  - Soft voices.
  - Quiet, rhythmic music.

• **Tactile:**
  - Deep pressure activities: crash and smash, kid burrito, steamroller, weighted objects in lap, etc.
  - Neutral warmth.
Proprioceptive Input Ideas:

- Wheelbarrow walks.
- Animal Walks.
- Yoga poses: downward dog, warrior, plank, tree.
- Basic exercises: jumping jacks, push-ups, anything meeting resistance.
- Pushing/Pulling Activities:
  - Carry grocery bags from the car to the kitchen.
  - Push a heavy laundry basket across the floor.
- Proprioceptive Snacks! Chewy, crunchy, sticky foods.
Your Body as an Engine

- **HIGH:**
  - Seeking, moving, on-the-go
  - Need calming/organizing input

- **Just Right:**
  - At your best
  - Attentive
  - Efficient
  - “Neurological happy place”

- **low:**
  - Tired, lethargic
  - Slow-moving, low registration
  - Difficult to alert
A few words of caution with implementing sensory strategies….

- Sensory vs. Behavior
- Any day can be a sensory roller coaster.
- There CAN be too much of a good thing.
- Vestibular input: utilize conservatively.
- Look at the WHOLE picture: environment, situation, your child (what is accessible).
Implementing Sensory Strategies at Home:

• Know your child.
• Consult an Occupational Therapist (if available).
• Make a plan.
• Execute intervention strategies.
1. Know your Child.

- Familiarize yourself with his/her sensory habits (seeking/avoiding patterns).
- Pay attention to daily schedule:
  - When do seeking patterns occur?
  - When do avoiding patterns occur?
- What is accessible to your child?
  - Consider age, language, and motor skills.
- Checklists from Sensational Brain.
  - http://www.sensationalbrain.com/forms/free-printable-forms/
2. Consult an OT 😊

- The OT will be able to determine appropriate activities and frequency of activities, and brainstorm helpful strategies to implement at home.
- If your child sees an OT, ask for a sensory home program if you haven’t received one already.
- The OT can help update exercises and recommendations as needed.
3. Make a Plan.

- Sensory meals and snacks should be provided throughout the day!
- Decide how to recognize when your child may be in need of calming or alerting strategies.
- Choose a time and location within the your daily routine to engage in sensory activities.
  - In the morning, before getting dressed.
  - After school during snack or before dinner.
  - Transitions.
4. Execute intervention strategies.

- Make a list of activities and hang them in your kitchen or living room.
- Identify times of the day when you can do these activities:
  - Morning.
  - After School.
  - Before Bed.
Ideas for Sensory Tools in Your Home:

- Body Sock
- Exercise Ball
- Mini Trampoline
- Beanbags and/or Pillows
- Fidget Toys
- Rice Bin (or similar tactile experience)
- Play Tunnel
- Weighted Materials for seated activities: movies, game night, reading, homework.
Easily Store Sensory Equipment
A few examples of sensory equipment in action:
Create Sensory Areas in Your Home:
Use Your Community!
Choices, Choices, Choices!
Concluding Thoughts

• Movement is your friend!
• Proprioceptive activities have a DUAL EFFECT.
• Think about the signs/signals you may want to look for with your child, and be proactive.
• Use your community resources!
• Have fun!
Friendly Resources

Sensory Processing Disorder (SPD) Foundation:
http://www.spdfoundation.net/index.html

An Amazing Sensory Chart! Calming vs. Alerting:

Sensational Brain:
http://www.sensationalbrain.com/
Recommended Readings

• *Living Sensationally: Understanding Your Senses*
  • By Winnie Dunn

• *The Art of Roughhousing*
  • By Anthony T. DeBenedet, MD and Lawrence J. Cohen, PhD

• *The Out-Of-Sync Child Has Fun*
  • By Carol Stock Kranowitz

• *The Alert Program*
  • By Mary Sue Williams & Sherry Shellenberger
Thank you for your time and attention!
References


• Kimball, J. Personal communication. April 27, 2013.