Sensory Integration: Understanding and Meeting Your Child's Needs

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What are the Senses?

The common senses are:

Taste

Smell

Vision

Hearing

Touch

Two hidden senses are:

Vestibular (sense of movement)

Proprioception (sensations from muscles and joints).

What is Sensory Integration?

- It is our ability to take in information from the world around us through our senses, sort it out in the brain, and respond to it successfully.

- It takes place automatically, without us having to “think” about it.

How Does Sensory Integration Develop?

- Sensory integration is pre-programmed to develop from conception
- However, it takes sensory experiences to activate and/or enhance this process
- We are designed to enjoy things that promote the development of our brain, and therefore seek out sensations that help organize our brain
- All of us have sensory preferences and “issues” that we accommodate for on a daily basis.
- It is when sensory difficulties interfere with everyday life that it becomes a problem.

When there is a problem:

- If the brain is unable to understand and process sensory information efficiently, then that child may have a difficult time functioning in every day life.
- The child may be awkward and clumsy, fearful and withdrawn, or hostile and aggressive.
- It can affect how a child moves and learns, how he behaves, how he plays and makes friends, and how he feels about himself.
- A lot children have some sensory issues, and would benefit from their caregivers understanding their sensory needs.
- If the problems are severe and interfere with everyday life, a therapist can evaluate and help establish a plan of care.

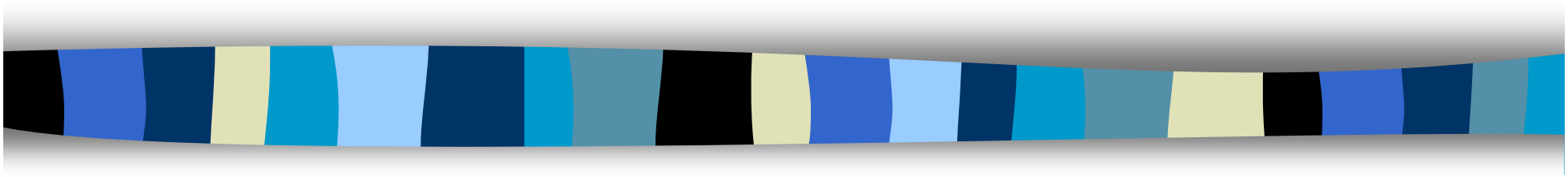
Continuum

- It is helpful to think of the senses as being on a continuum, with extremely sensitive on one end, and not even noticing the input on the other end.
- A child can be hyper-sensitive or hypo-sensitive in one area, in several areas combined, or in all areas.
- To make it even more confusing, it can change day to day based on how they feel, their environment, the amount of stress in their lives, hunger patterns, or sleep patterns.

Behavior

- Sensory integration provides the input for the development of emotional stability, sound judgment, and the ability to form meaningful and personal relationships
- A child's behavior and emotional social adjustments are strongly influenced by his ability to relate to his environment
- Many "behavior problems" may be directly or indirectly related to the child's sensory processing

The Senses



Gustatory
(Sense of Taste)

- We all have taste preferences
- Some kids are very sensitive to tastes
- These kids may have a limited amounts of foods and drinks that they like
- Others may not react to even the most powerful input
- These kids may seek out very powerful tastes, for instance, very sour candy

Olfactory
(Sense of Smell)

- Smell can be a very powerful and emotional input
- Kids who are sensitive to smells may become irritated or upset and not really know why
- Be aware of how different smells may effect your child's emotions.

Some Ideas…

- Be sensitive to your child's preferences
- Understand that smell is directly related to emotions
- All odors tend to be alerting
- Familiar odors that can be associated with pleasurable experiences tend to be calming

Visual System
(Vision)

- Vision is more than just “seeing”.
- We need to be able to process what we see and make sense of it.
- Other terms: visual-motor, visual-perception, visual attention

A child with difficulty in visual processing may:

- be easily distracted by visual input
- avoid eye contact
- have difficulty finding things, especially in clutter
- have difficulty with writing, copying shapes and letters
- have difficulty with games like hitting a target, batting
- have overall poor coordination
- If over-sensitive, may become irritated with bright or flashing lights

Some Ideas…

- For the over-sensitive child, try sunglasses for in the car or when outside
- Hats with bills can block some of the sun
- Visors on car windows
- Decrease the amount of visual stimuli in the environment
- Label and organize toys
- Blue-green shades, and dim and dark are calming
- Red-yellow shades and black and white patterns are alerting
- Changing and moving patterns of light are alerting
- Familiar and predictable visual input is calming
- Visual boundaries with fine and gross motor activities can be beneficial

Auditory System
(Hearing)

- As with vision, we must be able to process what we hear and make sense of it.

If overly sensitive to sounds a child may:

- become upset easily with loud or unexpected noises
- attend to noises that we don't even notice, causing them to be distracted

If a child has trouble with auditory processing they may:

- appear to be "ignoring" you when you talk
- look confused when given verbal instructions.

Some Ideas…

- Decrease the amount of noise, if possible, especially when trying to concentrate
- Can try cotton balls, head phones, head bands over ears to decrease noise levels
- Get eye contact when talking to a child with auditory processing difficulties
- Talk slow and use simple sentence structures
- Wait to give them time to process what you've said
- Give information in a variety of ways – verbal, pictures, objects, movement
- Use visual schedules, photo cards, social stories

Tactile System
(Touch)

There are two types of touch receptors in our body:

* Protective system- responds to light or unexpected touch (alerts us to harmful stimuli). It warns us if a spider is crawling down our arm, so we automatically go to wipe it off.
* Discriminatory system- helps us understand about the quality of stimuli i.e. hard, soft, round.

Children may be over-reactive or under-reactive to touch, or they may not be able to discriminate between different types of touch.

Tactile System (Touch)

If a child is over-reactive, or over-sensitive to touch they may:

- be irritable and controlling
- withdraw from touch
- avoid different textures
- have a hard time with certain self care tasks
- be distractible and on the move
- not like tags in clothes, seams in socks, or certain fabrics
- be very picky eaters and gag with eating

Tactile System (Touch)

Children over-sensitive to touch may also:

- use avoidance behaviors, like running away or always on the move, to avoid being touched
- strike out at others that touch them, or strike out when they perceive that they are going to be touched
- these children are always on high alert. They are in a fight, fright, or flight mode most of the time
- little things can set them off (explosive)
- These responses are automatic and protective

Some Ideas…

- For the child who is over-reactive to touch….

- As a caregiver, it is important to understand why the child is acting the way they are, and then help to alleviate the discomfort (i.e. tags in clothes, threat of being touched)
- Catch them doing something right, then praise or complement them.
- Try to ignore as many of the negative behaviors as possible, and then change the environment so that the stresses are less.

More Ideas…

- Encourage them to participate in tactile experiences, but NEVER force – these kids avoid tactile experiences, but they are the ones that really need it so they can learn from them.
- Some activities include: sand, rice, bean pools, lotion, shaving cream, finger paints, different types of brushes, playdoh, obstacle courses through different textures.
- There are a lot of store-bought tactile items – bath foams, texture balls, etc…
- Letting the child, rather than you, administer the input is usually more beneficial and less threatening.

More Ideas…

- Deep, heavy, proprioceptive input is usually calming:
- Some activities include pushing, pulling, loading, unloading, climbing, jumping, deep pressure input, weighted lap pads.
- Pairing textures with deep input can be helpful, i.e. squeezing texture balls
- Deep oral input can be calming, so finding appropriate things they can chew on, like NUK brushed, bandana with knot, gum or chewy candy, sour candy can be organizing.

Tactile System
(Touch)

If a child is under-responsive to touch, they may:

- be messy, not minding hands or face being sticky or dirty
- mouth objects frequently or chew on pencils
- use poor judgment regarding personal space, not noticing others
- not seem to notice being touched
- slow to respond to touch

Some Ideas…

For the child who is under-reactive to touch…

- These children also need to be exposed to tactile experiences so they can learn from them.
- The same ideas from above are beneficial to these children as well
- Can use weighted spoons and utensils, or use bigger and different types of grips.
- Using visual and verbal prompts – having mirrors
- Expose, explore and talk about textures all the time

Vestibular System
(Movement)

- Our vestibular system is located in the inner ear.
- It responds to body movement through space and change in head position.
- It automatically coordinates movements of eyes, head and body and is responsible for our sense of balance.

Vestibular System
(Movement)

If a child is over-reactive to movement, they may:

- be insecure about movement experiences
- avoid or fear movement
- avoid new positions, especially of the head
- avoid playground equipment
- get carsick easily
- enjoy sit-down, tabletop activities instead of movement play
- hold onto walls or banister
- become overly excited after a movement activity

Vestibular System
(Movement)

If a child is under-reactive to movement, they may:

- crave movement activities or rock in their chair
- have trouble with balance, sitting upright, and difficulty walking on uneven surfaces
- be slow to respond to movement demands, clumsy and lethargic
- have poor endurance and tire easily.

Precautions…

- *It is very important NEVER to impose vestibular input on a child. Give them the opportunity to direct it.
- *Vestibular input is very powerful. The effects can stay with you for hours. Signs to watch for are loss of facial expression, avoiding eye contact, becoming fussy, irritable, crying, drooling, anxious, sleepy, dizzy, nauseated, sick, over stimulated.
- Pairing deep, heavy input with movement can be beneficial as a calming factor.

Some Ideas…

For smaller children, some activities include:

- bouncing on knee or ball
- being pulled on a blanket or pillow
- holding and rocking
- swinging
- stroller, wagon, riding in a car
- dancing with child in your arms
- rolling in a blanket

Some Ideas…

For children who are able to move on their own, some activities include:

- swing, slide, merry-go-round, and other playground equipment
- climbing, jumping, and active play
- climbing in, under, and around furniture, obstacle courses
- running, skating, skiing, dancing
- bouncing (ball, bed, trampoline)
- rocking
- scooter boards in different positions (sitting, on tummy, knees, bottom)
- tumbling, rolling down grassy hill
- riding a bike

Proprioception

- These receptors give us information from our muscles, tendons, ligaments, and joints.
- They help us know where our body is in space.

Children with difficulty processing proprioceptive input may:

- have difficulty with motor planning, like figuring out how to maneuver gym equipment, ball play, ride bike, or do fasteners
- tense muscles, hyperextend or lock arms/legs
- have weak grasp, tire easily, lean often, prop themselves on hands
- They pop, plot, and prop
- have all-in-one movements
- plow right over their friends
- tend to lean on any support surface that they come into contact with
- be heavy handed and heavy footed. You can hear them walking down the hall because they “plop” their feet
- seek out tight spots, squeeze between furniture and like layers of heavy clothes or weight on their body
- Seem to be less aware of their body; clumsy

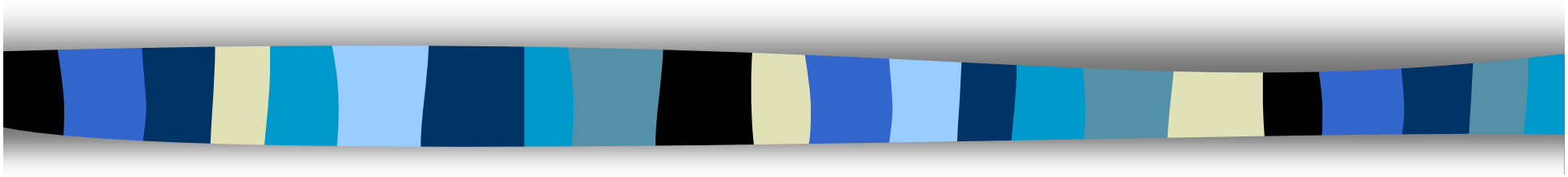
Some Ideas…

- Proprioceptive, tactile and vestibular input can help these children learn about their own body in space and body awareness.
- Use the same precautions as you would with the other areas
- Heavy work and play activities, movement, weighted objects are all helpful
- activities that require reaching, stretching, elongation
- these children tend to do better if they can stand, or move from place to place, or can try sitting on ball or disc when having to do table top activities.
- frequent breaks that involve movement help alert their systems.

Guidelines

- Providing sensory activities throughout the day can help a child stay at the optimal state of arousal for learning. Use calming activities during stress periods and alerting activities during slow periods
- Try to read the child and provide input before a meltdown in order to keep them within the optimal state. Give them what they need before they need it
- Routines are important; using transition helpers can often help daily activities run smoother
- If you use an activity that the child has an interest in you will stop an open confrontation
- Plan outings around less stressful times of the day.
- Remember that the more stress a child has on them the less able they are to deal with aversive sensory input (i.e. sick, tired, hungry)

SENSORY RESOURCES



BOOKS

- The Out-of-Sync Child: Recognizing and Coping With Sensory Integration Dysfunction
  By Carol Stock Kronowitz

- The Out-of-Sync Child Has Fun: Activities for Kids with Sensory Integration Dysfunction
  By Carol Stock Kronowitz

- Parenting a Child with Sensory Processing Disorder
  By Christopher Auer and Susan Blumberg

- Understanding Sensory Dysfunction: Learning, Development and Sensory Dysfunction in Autism Spectrum Disorders ADHA, Learning Disabilities and Bipolar Disorder
  By Polly Godwin Emmons, Liz McKendry Anderson

- Raising a Sensory Smart Child: The Definitive Handbook for Helping Your Child with Sensory Integration Issues
  By Lindsey Biel, Nancy Peske

- Sensory Integration and the Child
  By A. Jean Ayres

Books Continued

- Building Bridges through Sensory Integration
  By Ellen Yack, Paula Aquilla, Shirley Sutton

- Sensory Secrets: How to Jump-Start Learning in Children
  By Catherine Schneider

- Answers to Questions Teachers Ask about Sensory Integration
  By Carol Stock Kronowitz, Deanna Iris Sava, Elizabeth Haber, Lynn Balzer-Martin, Stacey Szklut

- 101 Activities for Kids in Tight Spaces: At the Doctor's Office, on Car, Train, and Plane Trips, Home Sick in Bed…
  By Carol S. Kronowitz

- Too Loud, Too Bright, Too Fast, Too Tight: What to do if you are Sensory Defensive in an Over stimulating World
  By Sharon Heller

- Occupational Therapy for Children with Special Needs: Occupational Therapy for Children with Problems with Learning, Co-Ordination, Language, and Behaviour
  By Elaine Wilson and Helen Edwards

Books Continued

- Dr. Larry Silver's Advice to Parents on Attention-Deficit Hyperactivity Disorder
  By Larry silver, MD

- The Sensory-Sensitive Child
  By Karen A. Smith, Ph.D. and Karen R. Gouze, Ph.D

- The Everything Parent's Guide to Sensory Integration Disorder
  By Terri Mauro

- Occupational Therapy for Children with Special Needs: Occupational Therapy for Children with Problems with Learning, Co-Ordination, Language, and Behaviour
  By Elaine Wilson and Helen Edwards Smart Moves: Why Learning is not all in Your Head
  By Carla Hannaford, Ph.D.

- Oh Behave! Sensory Processing and Behavioral Strategies
  By Maryann Colby Trott, M.A.

- SenseAbilities: Understanding Sensory Integration
  By Maryann Colby Trott, M.A. with Marci K. Laurel, M.A. CCC-SLP and Susan L. Windeck, M.S. OTR/L

Websites

- http://www.sensorycomfort.com
  Provides information about resources and products for children with SID.

- http://advancedbrain.com
  Provides information about the listening program.

- http://www.coping.org/intervention/sensory/sensintegact.htm
  Provides sensory modulation and integration activity ideas for children 0-5.

Community: Sensory Integration

- http://www.comeunity.com/disability/sensory_integration/
  Excellent selection of articles on sensory integration in children

Children's Disabilities Information

- http://www.childrensdisabilities.info/sensory_integration/
  More articles and resources on the impact and treatment of sensory integration disorder

Center for the Study of Autism

- http://wwww.autism.org
  Several useful articles on sensory integration are available on this large website

Sensory Integration Network

http://www.sinetwork.org/

Provide parent, occupational therapists, and physicians with articles and Internet resources.

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http://www.sinetwork.org/

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Sensory Smarts

http://www.sensorysmarts.com/

Sensory integration tips and advice on finding an occupational therapist from Lindsey Biel and Nancy Peske, authors of Raising a Sensory Smart Child.

Sensory Integrative Dysfunction in Young Children

http://www.tsbvi.edu/Outreach/seehear/fall97/sensory.htm

Article by Linda C. Stephens describing sensory integrative dysfunction in children.

The Out of Sync Child, By Carol Stock Kranowitz

http://www.out-of-sync-child.com

Website for the author of The Out of Sync Child.

http://www.sensoryint.com/

Sensory Integration International – organization concerned with sensory integration

http://www.si-challenge.org

Information about sensory integration.

http://www.bridges4kids.org