



Understanding The Sensory World Around You

Presenters:

Janet Carioni, Occupational Therapist
Lori Hill, Occupational Therapist

**FASD Forum 2011
November 14, 2011**



Presentation outline

- What is an OT anyway?
- Sensory Processing – What is that???
- The Seven Senses- What, How and Why?
- ‘I can’t get enough’ vs. ‘Don’t do that!’- Seeking and Avoiding
- “I notice everything” vs. “I notice nothing” – Sensitive and Low Registration
- Neat Gadgets and Tricks
- Case Study
- Conclusion

What do Occupational Therapists do?

Occupational Therapists (OT) help children to do everyday things and follow everyday routines.

How?...Skill building, Strategies, Environmental Adaptations.

Common Areas of Focus: Sensory Processing, Fine Motor Skills, Play Skills, Self Care Skills, Daily Routines.

Occupational Therapy

- What types of children do we see?

Sensory Difficulties

Fine Motor Concerns

Feeding Difficulties

Self Care Delays

Developmental Delays

Physical Impairment

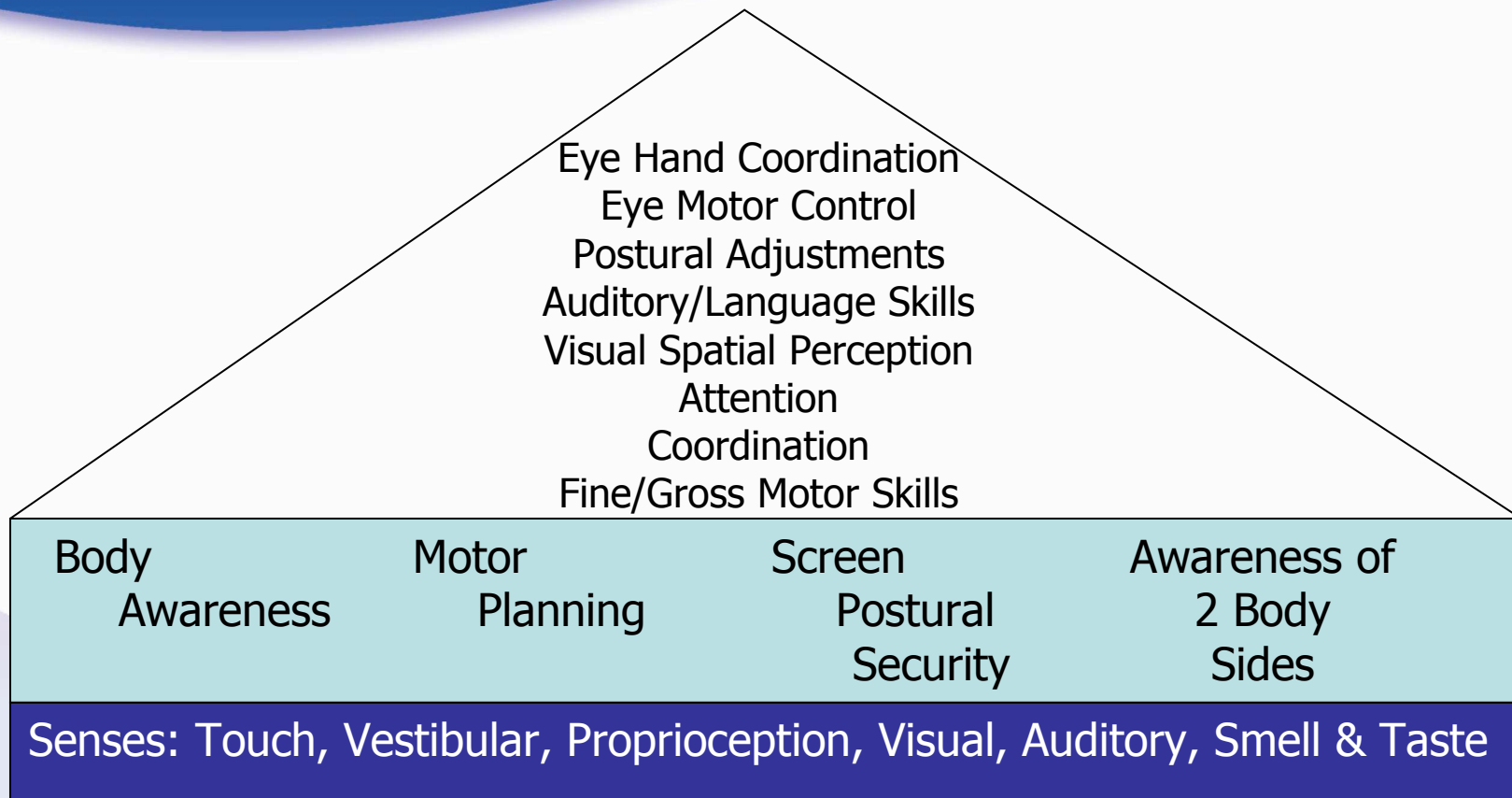
Cognitive and Behavioural Delays

Sensory Processing

Our bodies and the environment send our brains information through our senses. This information is processed and organized so that we feel:

- Comfortable
- Secure
- Able to respond appropriately to particular situations and environmental demands
- Balanced system

Sensory Integration is the Foundation for Learning!!!

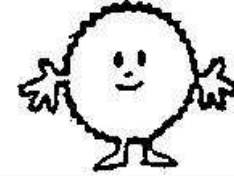


Yack, E., Sutton, S., Aquilla, P. (1998). *Building Bridges through Sensory Integration*. Toronto, ON: Print Three.

The 7 Senses

- Touch (Tactile System)
- Vestibular (Balance/Movement)
- Proprioception (Awareness of Body Position)
- Sight (Vision)
- Hearing (Auditory)
- Smell (Olfactory)
- Taste (Gustatory)

TOUCH



Receptors in skin cells all over our bodies and in our mouths provide us with information about:

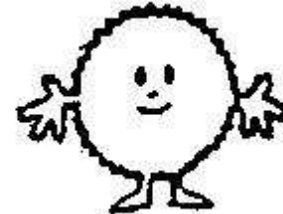
- light touch
- pressure
- vibration
- temperature
- pain

Contributes to the development of body awareness
and motor planning

The cortical (Motor) Homunculus



Tactile Dysfunction



Sensory Seeking

- Stroke hair
- Like to feel things, may constantly grab things, touch peers

Sensory Avoiding

- Become upset if you touch them unexpectedly
- Bothered by others bumping into them or if someone is in close proximity, may become aggressive in line.
- Become irritated with certain clothing or food textures
- A nightmare with haircuts, tooth brushing, wiping nose, grooming.

Light touch vs. Deep touch

- **Light touch** - creates a fight or flight reaction
- **Deep touch** – calms nervous system and stimulates nerve growth factor



Vestibular



Receptors are located in the structures of our ears

Provides us with information about:

- Movement
- Gravity
- Changing head positions

Tells us if we are:

- Moving - What direction, speed, position we are in (ex. horizontal or vertical)
- If objects are moving around us.

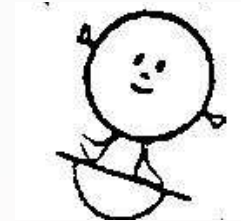
Vestibular



Allows us to accurately use:

- Our vision
- Prepare our posture
- Maintain balance
- Plan our actions
- Move
- Calm ourselves
- Regulate our behaviours.

Vestibular Dysfunction



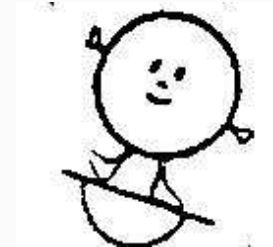
Sensory Seeking

- Child is always on the go, difficulty staying put for circle, table activities.
- Running, climbing, jumping, tumbling
- Rocking in chair

Sensory Avoiding

- May become disoriented or sick after movement activities.
- Don't like their head tipped backwards
- Avoid balancing activities

Vestibular Dysfunction



Sensory Sensitive

- Distracted by movement
- Reactive

Low Registration

- Struggles with body awareness
- Very sedentary

Proprioception



Receptors are located in muscles, tendons, ligaments, joint capsules and connective tissues

Tells us:

- Where our body parts are:
 - positioned
 - their relation to each other, people and objects
- How much force is needed to grade our movements

Helps us develop a body scheme/map that we memorize and use to develop motor planning abilities...dysfunction in this sense has a very significant impact on calmness, focus and coordination!!!!

Proprioceptive Dysfunction

- Poor body awareness and motor planning
- Difficulties with fine and gross motor skills
- May seek out deep pressure

Sensory Seeking

- Bang head or back against couch
- Like to squeeze between furniture
- Enjoy hugs, back rubs
- Pinch, push, hit

Sensory Avoiding

- Avoid fine and gross motor activities due to poor body awareness and motor planning



Proprioceptive Dysfunction

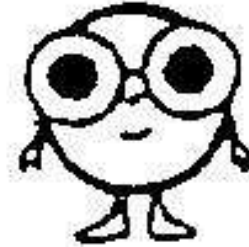


Low Registration

- Bumping into things, struggles with body awareness
- Lack personal space
- Do not realize strength

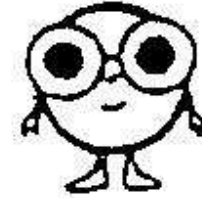


Sight



- Receptors are in the retina of the eye.
- As a child develops, they learn to coordinate their eyes with the hands, feet and body movements.
- Vision works with the other sensory systems to direct accurate motor responses.

Visual Dysfunction



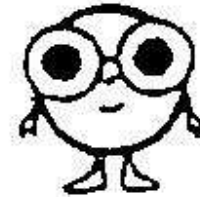
Sensory Seeking

- Focus on shadows, reflections, spinning objects
- Like to turn lights on/off
- Pick small items off of floor

Sensory Avoiding

- Uncomfortable in strong sunlight
- Squints or sensitive to changes in lighting
- Poor eye contact

Visual Dysfunction



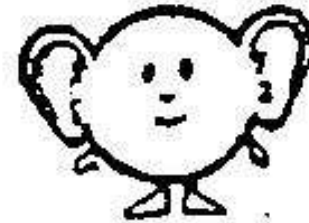
Sensory Sensitive

- Distracted by visual inputs
- Reactive

Low Registration

- Does not notice visual cues
- Do not notice people's emotions
- Struggle with social skills

Hearing



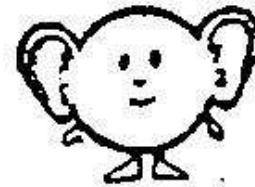
- Airwaves stimulate receptors in the ears.
- Accurate auditory stimulation and processing is essential to the development of communication.



Auditory Dysfunction

Sensory seeking

- Enjoy repeating certain sounds
- May hum or sing
- Loves noisy toys, music, sound effects



Sensory Avoiding

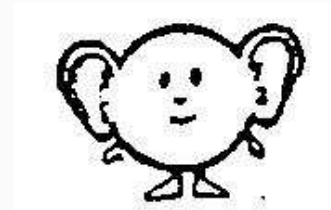
- Upset by loud noises/Covers ears
- Easily distracted by sounds
- May be aggressive when classroom is busier
- May hum, sing, talk to self

****Consider Auditory Filtering and Multisensory Processing

Auditory Dysfunction

Sensory Sensitive

- Distracted by noises
- Miss instructions



Low Registration

- Does not attend to sounds in environment
- Struggles with language/social development

Smell & Taste



- Receptors located on the nasal structure and on the tongue.
- Certain smells and tastes may be arousing or inhibitory.

Smell/Taste Dysfunction

Sensory Seeking

- Eats non-edible foods (pica)
- Will only eat preferred food all the time
- Smells people, objects



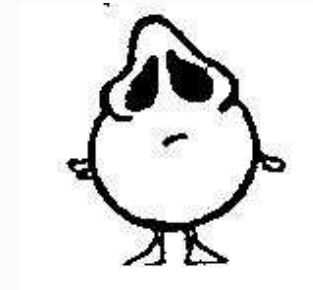
Sensory Avoiding

- Poor tolerance of perfumes-may become overwhelmed, fidgety, gag, vomit, agitated
- Dislikes new toys or toys with a strong smell
- Will not wear new clothing because of smell
- Hesitant to try new foods

Smell/Taste Dysfunction

Sensory Sensitive

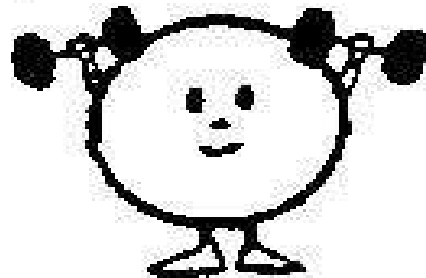
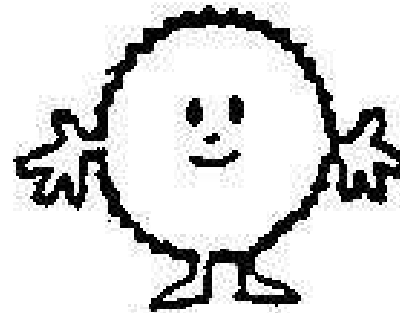
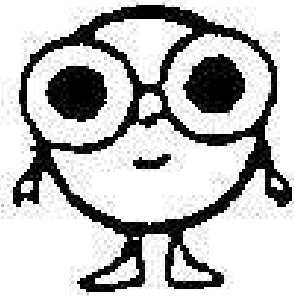
- Distracted by smells
- Struggle with mealtime routines



Low Registration

- Does not notice smells
- Poor oral motor skills

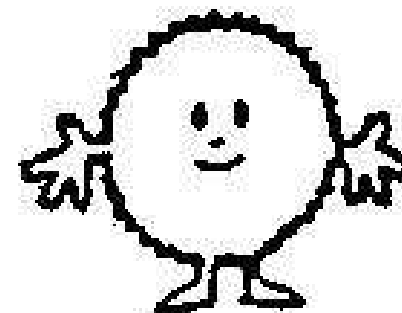
Sensory Strategies



Sensory Strategies: Tactile

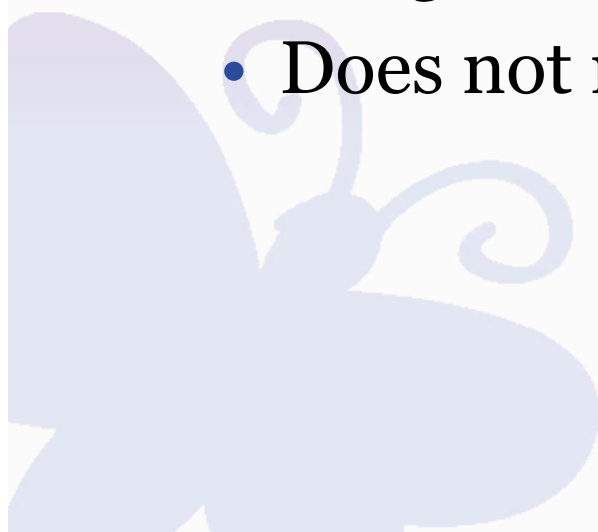
Sensory Sensitive

- Distracted by touch
- Reactive

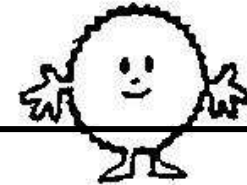


Low Registration

- Does not notice touch at all



Sensory Strategies: Tactile

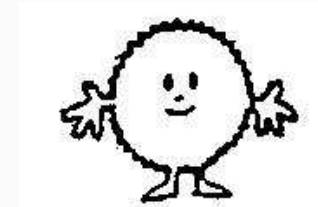


Observed Behaviour	Possible Strategy
Not feeling sensations	Add extra sensation, e.g. verbal/visual cue along with touch, massage
Avoids messy play	Massaging hands prior to the touch
Avoids certain clothing	<ul style="list-style-type: none">• Proprioceptive activities• Soft clothes, snug fitting clothes (spandex, lycra)
Likes to feel things	<ul style="list-style-type: none">• Provide with fidget/sensory toy• Make sensory bins available

The cortical (Motor) Homunculus



Hands-on: Tactile



- Fidgets
- Rice Bin
- Clapping games
 - <http://www.childstoryhour.com/gamesclapping.htm>
- Massage

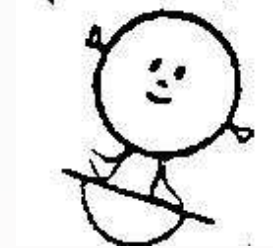
Sensory Strategies: Vestibular



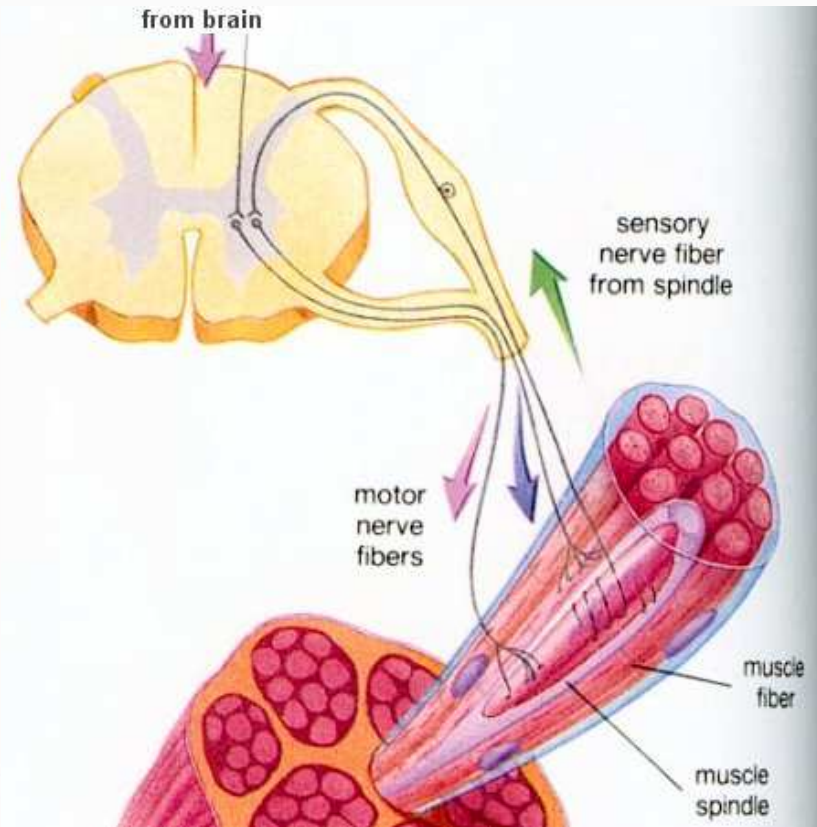
Observed Behaviour	Possible Strategy
Fidgeting in Chair	<ul style="list-style-type: none">• Move n' sit cushion, rocking chair, ball chair• Provide opportunities for movement breaks, therapy ball activities, mini trampoline...very important to pair with proprioceptive
Jumping, running, spinning	Gentle swinging
Avoids stairs or walking on different surfaces	Gradual introduction to non threatening vestibular activities (i.e. start with an area with 2-3 steps).

Hands on: Vestibular

- Exercise Ball/Peanut ball
- Row-row-row your boat
- A frying egg
- Floppy on the ball
- Ball chair



Muscle Proprioceptors



Sensory Strategies: Proprioception

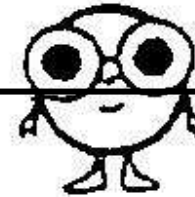
Observed Behaviours	Possible Strategy
Flapping hands	Wall push ups, jumps with hands held, wheelbarrow walks, hand presses. Weighted wrist band.
Squeeze between furniture	Weighted vest or snug fitting clothes, deep pressure activities such as wall push ups, toys that are squeezable
Clumsy – weak fine motor/gross motor	Body awareness activities, activities that provide input to joints (i.e. catch a heavy ball/beanbag, weighted pencil)

Hands on: Proprioception



- Trampoline
- Weighted vest
- Compression vest
- Joint compressions
- Lap snake
- Weighted blanket
- Hot dog

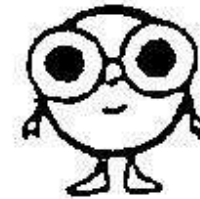
Sensory Strategies: Visual



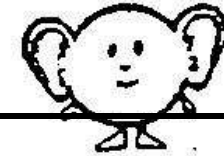
Observed Behaviour	Possible Strategy
Fingers in front of eyes, twirling objects in front of face	<ul style="list-style-type: none">• Provide scheduled time to play with visually stimulating toys.• Sand and water play
Sensitive to changes in lighting	<ul style="list-style-type: none">• Look at sitting arrangement (i.e. away from windows)• Sunglasses for outdoors/ball cap• Decrease fluorescent lighting• Proprioceptive activities
Poor eye contact	Teach child to look in mirror and then at own image and gradually move to looking at eyes. Bring objects to your eye level to encourage eye contact

Hands on: Visual

- Light up toys
- Sunglasses
- Spinning top
- Turning lights down
- Blocking out information on page



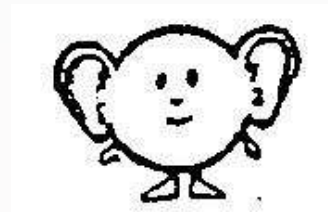
Sensory Strategies : Auditory



Observed Behaviour	Possible Strategy
Banging on objects, making loud noises	<ul style="list-style-type: none">• Music corner, headphones with music, time limits with noisy toys
Covers ears	<ul style="list-style-type: none">• Reassure source of sound or prepare for loud noises, fidget toys, breaks from busy rooms, relaxation techniques, white noise• Social stories
Easily distracted	<ul style="list-style-type: none">• Proprioceptive activities• Quiet corner or area for work activities


Hands on: Auditory

- Ear protectors
- iPod/MP3 player
- Ear plugs
- Chewing or sucking on gum or hard candy



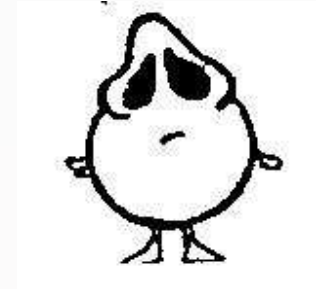
Sensory Strategies: Smell/Taste



Observed Behaviour	Possible Strategy
Smelling objects, others hair, clothes	<ul style="list-style-type: none">• Smelling jars, use scented objects like smelly markers, scented playdoh
Eating/mouthing non-edible objects	<ul style="list-style-type: none">• Provide crunchy/chewy foods throughout day, vibrating toys around mouth, chew tubes• Proprioceptive activities
Picky eater	<ul style="list-style-type: none">• Oral motor desensitization activities (vibrating brush, nuk brush), adding intense flavour to food, slowly modifying preferred foods 

Hands on: Smell/Taste

- Oral toys
- Vibrating teethingers
- Smell kit
- Spin toothbrush



General Summary

- 7 Senses
- 4 categories
- Focus is to calm and organize
- Strategies



Important Notes

- Beware of the kid in a candy store syndrome.
- Structured, step-wise approach is essential.
- Signs of Sensory Overload: Increased activity or sensitivity; nausea, distractibility, disorientation; rapid or shallow breathing, paleness or flushing; sweating; increase or decrease in muscle tone; drowsiness; glazed eyes.
- All nervous systems are unique.
- Sensory needs change and fluctuate over time.

Case Study

Margot Round

Margot is a 4 and a 1/2 year old girl who tends to be on the go over the course of the whole day. Margot plays with others when the play is very active and rough. Margot frequently bumps into obstacles in the classroom and has had numerous incident reports for accidents, such as walking into a cupboard. She sits at her desk by the door and is distractible, moving around lots in her seat. Margot moves very quickly and does not appear to have a sense of safety. She gets very distressed in large stores. She has a difficult time settling at night to get to sleep. *What senses are involved here? Can you think of strategies to help Margot?*

Case Study

Margot Round

- What senses are involved here?
- Can you think of strategies to help Margot?



Questions and Comments

Questions?

Comments?



Helpful Resources

- *Building Bridges through Sensory Integration* by Shirley Sutton and Paula Aquilla.
- *The Out of Sync Child* by Carol Stock Kranowitz
- *The Out of Sync Child Has Fun* by Carol Stock Kranowitz
- *Raising a Sensory Smart Child* by Lindsay Biel and Nancy Peske www.sensorysmarts.com
- *Sensational Kids: Hope and Help for Children with Sensory Processing Disorder* by Lucy Jane Miller

Helpful Resources

- *The Sensory Processing Disorder Answer Book: Practical answers to the top 250 questions parents ask* by Tara Delaney
- *101 Games and Activities for Children with Autism, Asperger's, and Sensory Processing Disorders* by Tara Delaney
- *The Ultimate Guide to Sensory Processing Disorder: Easy, everyday solutions to sensory challenges.* By Roya Ostovar
- *Sensory Processing Disorder Resource Center*
<http://www.sensory-processing-disorder.com/>

Thank You

