

Sensory Processing Disorder



- What is Sensory Processing Disorder (SPD)
- How to recognize SPD in children
- How to create a sensory smart classroom

Region 10 Education Service Center

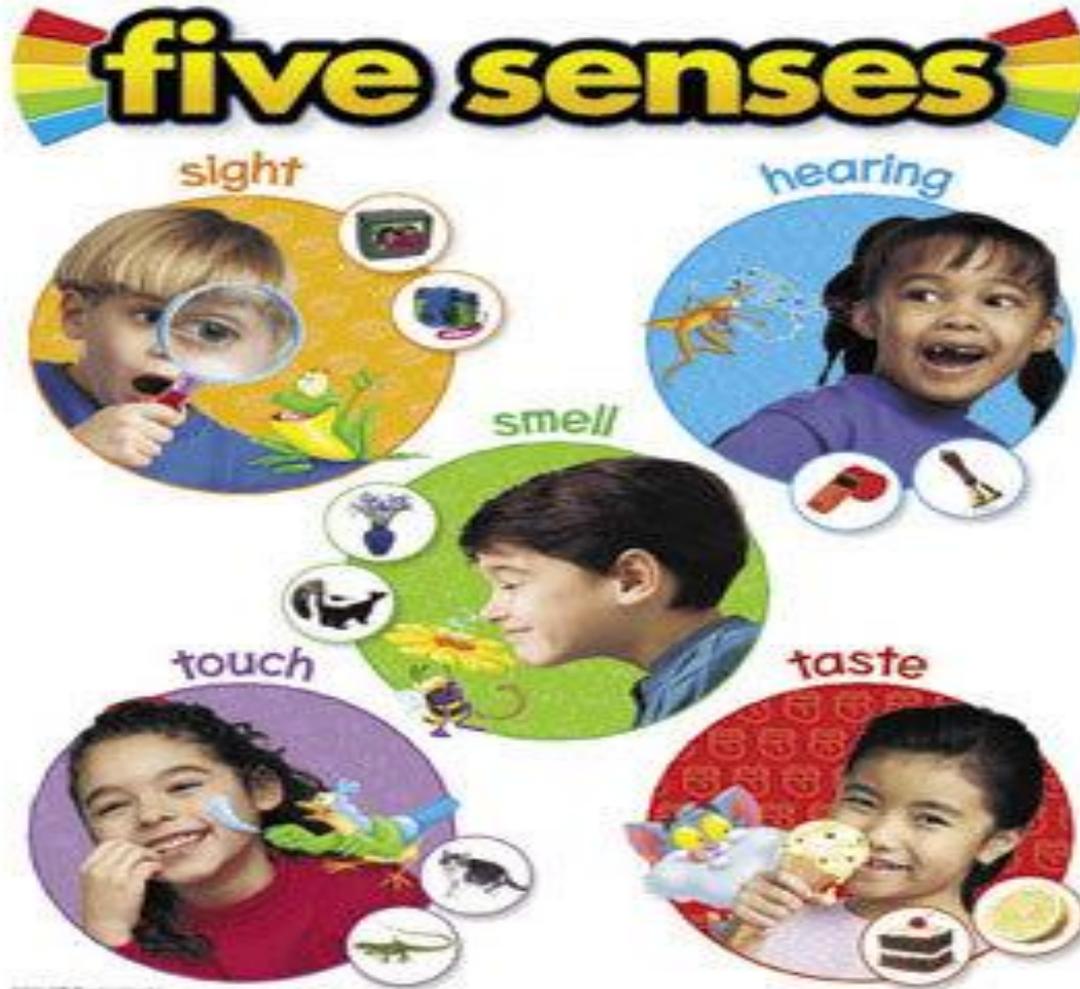
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Objectives for the Workshop



- You will know how to identify students in the classroom with one or more sensory dysfunctions
- You will see how sensory processing disorders can influence behaviors in the classroom
- You will learn strategies that can be used to get students ready for learning
- You will get some ideas on how to create a more optimal learning classroom environment for these students

The 5 familiar senses- The far senses



The Near Senses



The Tactile, Vestibular & Proprioceptive Systems

- These are the 3 sensory systems that are most troublesome to students with Sensory Processing Disorder

I'm a Sensational Kid



And chances are, there's a kid like me in your classroom





- <http://www.youtube.com/watch?v=m9l8kQIrmvs&feature=youtu.be>

Why do we need these sensory systems?



We learn about and understand the world through our senses, and that is called Sensory Processing

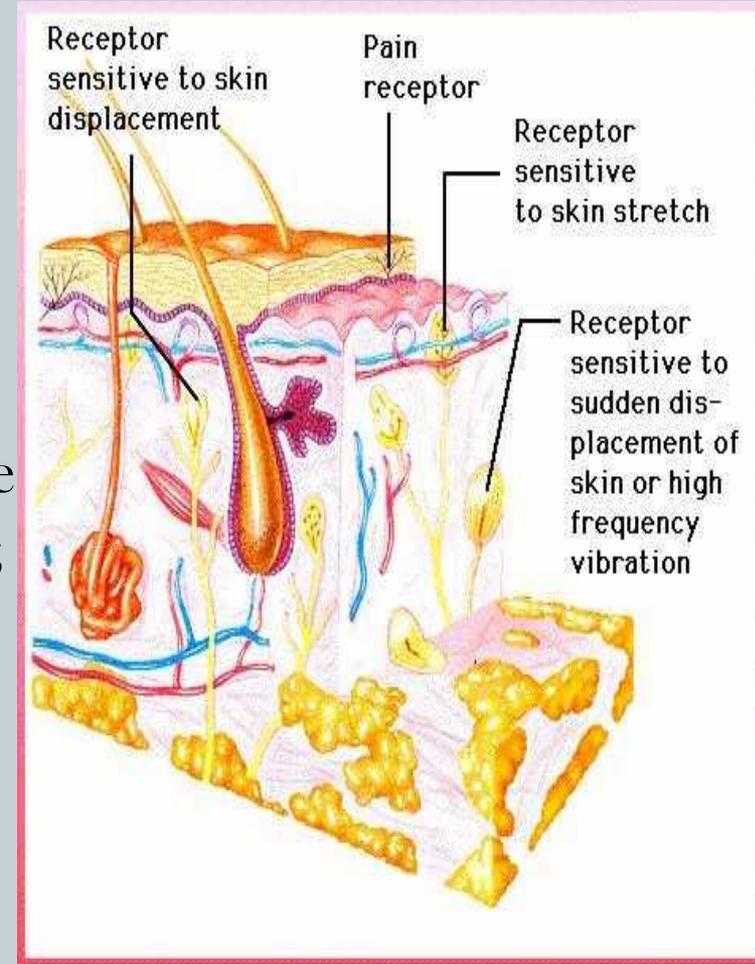
Sensory Processing: is the neurological process by which we transform the information provided by all the sensations coming from within our bodies and the environment into meaningful message we can act on. It happens without any conscious effort from us.

Sensory Processing Disorder: occurs when the systems do not function as they are supposed to. People with sensory processing issues are “wired” differently. They don’t take in and use sensory input in a typical way, so they do not always have accurate reliable information about their bodies and what’s happening in the environment.

The Tactile System

The Tactile System is the system which:

- Layers our bodies
- Gives us information about physical objects surrounding us.
- Is the physical barrier between ourselves and the environment
- Receptors are in the skin and serve the purposes of detecting & discriminating; pressure, vibration, movement, pain & temperature.
- Takes in this information processes and organizes it to make a meaningful and accurate picture of the stimulus.



The Tactile System- is made up of 2 components

Protective (defensive) System:

- Detects and alerts the neurological system of danger.
 - Hot temperature
 - Sharp objects
 - Insect bites
- If this system is on High Alert, it may perceive many things as being dangerous that are not. Ex. light touch may feel like pins/needles

Discriminative System:

- Responsible for discriminating between various objects.
- Informs us of size, shape, texture and density of a stimulus
- Tells us that we are touching something or something is touching us, and where on the body
- Tells us whether the touch is light or deep.

The Tactile System



Tactile System Dysfunction - occurs when there is the inefficient processing in the central nervous system of sensations perceived through the skin.

- An individual with tactile system dysfunction may be unable to distinguish between dangerous and safe tactile sensations, and may misinterpret a friendly touch as being threatening.

How to tell if a child has problems with Tactile Sense



Tactile Defensiveness / Hypersensitivity

- Reacts negatively and emotionally to unexpected, light touch sensations. “Don’t touch me”
- Flinches when parent brush their hair, wash their face
- Avoids activities such as finger-painting
- Avoids light touch, but craves deep touch, deep pressure; likes bear hugs
- Always carry something in their hands (a toy)
- To get stimulation their brain needs, they touch surfaces, ex. running hands over furniture and walls.

How to tell if a child has problem with Tactile Sense.

Tactile Defensiveness (Hyposensitivity)

- Under react to tactile experiences
- Do not notice when they get hurt – they fall, get bruised and pays no attention to their injuries
- Their tactile system does not do an effective job of self-protection.

How Tactile dysfunction affects a child's everyday life.



Tactile perception can't learn through the sense of touch

Body Awareness child is uncomfortable using his body in his environment because moving means touching, and would rather stand in a corner than mingle in a group

Motor Planning Trouble planning & organizing movements

Fine motor difficulty manipulating tools such as scissors, crayons, eating utensils

Gross motor out of touch with his body and objects in his world. Difficulty playing in meaningful ways; slow, awkward movements.

How Tactile dysfunction affects a child's everyday life.



Visual Perception By touching objects a child stores memories of their characteristics. When a child withdraws from touch stimuli, he has difficulty interpreting, and storing memories of tactile sensations.

Academic Learning In school many objects require hands on manipulation: tactile dysfunction prevents a child from learning easily because touch sensations distract him.

Emotional Security Child may have difficulty experiencing pleasure, enthusiasm, and joy in his relationships because of his responses to touch.

Social skills Establishing relationships is hard because child may be uncomfortable when his peers get near. Problems with socialization.

The Proprioceptive System



- Proprioception is the unconscious awareness of the body position. (Ex. you are sitting in a chair)
- Allows us to have knowledge of how much force & speed the muscle is required to generate in order to accomplish a specific movement which results in appropriately graded muscle control.
- Receptors are located in the muscles, tendons, ligaments, joints and connective tissues.



The Proprioceptive System



- [Brain Highways: The Proprioceptive System - YouTube](#)

The Proprioceptive System



- **Tactile-Proprioceptive:** simultaneous touch and body position. Necessary for tasks such as judging the weight of a glass of milk or picking up a pencil to write.
- **Vestibular-Proprioceptive:** simultaneous head and body position. Necessary for throwing and catching a ball or climbing stairs.
- **Proprioception:** increase body awareness, contribute to motor control and motor planning. It allows us to walk smoothly, to run quickly, to climb stars, to carry a suitcase, to sit, to stand and lie down.

How to tell if a child has problem with the Proprioceptive Sense



Proprioceptive dysfunction is the inefficient processing of sensations perceived through the muscles, joints, ligaments, tendons, and connective tissue.

- Child has poor awareness of body; crashes into objects without registering pain
- Difficulty grading their movements and controlling motor patterns, new positions throw them off guard
- Motor planning is very challenging, they are Clumsy, people refer to as “klutzy”

How to tell if a child has problem with Proprioceptive Sense



- Poor sense of postural stability through their trunk, Ex. in sitting
- Struggles to turn door knobs
- Poor grip on heavy objects, they have trouble with lifting and holding onto objects of different weights
- Poor awareness of pressure

Examples:

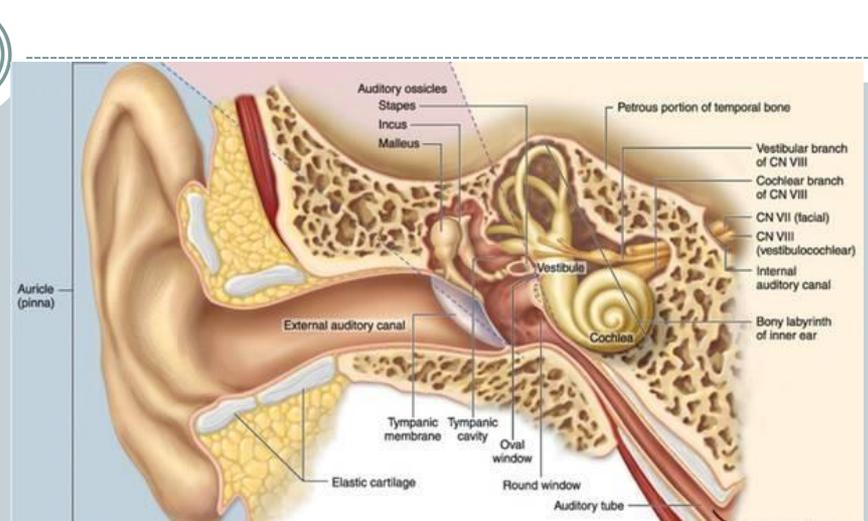
(1) The child has a tired hand after 5 minutes of handwriting and seems to be pressing down really hard on the pencil. They also erase very hard

(2) The Child pushes others excessively hard but may not realize it

The Vestibular System

Receptors for the Vestibular System are located in the inner ear and tells us where our head & body is in relation to the earth.

- It registers movement of the eyes, head and neck and responds to the pull of gravity
- This system sends messages to the CNS about balance and movement and helps us generate muscle tone so we can move smoothly and efficiently.
- Ex. Are you moving or standing still? What objects are moving around you.



The Vestibular System



- **Vestibular dysfunction** is the inefficient processing in the brain of sensations perceived through the inner ear. A child will be inefficient at integrating information about movement, gravity, balance and space.

How to tell if a child has problems with the Vestibular system



Child can be Hypersensitive/Intolerant of movement.

- Child will be uncomfortable on slides and rides that move fast or spin around.
- Riding in an automobile may cause car sickness.
- Avoid riding a bicycle
- Dizzy and nauseated with swinging, or watching someone/something spinning can make them queasy.
- Child avoids moving, feels vulnerable if feet leave the ground.

How to tell if a child has problems with the Vestibular system



Child can be Hyposensitive to vestibular sensations:

- Child seeks fast moving and spinning activities, but does not get dizzy.
- Child craves movement, because the brain does not facilitate enough movement messages.
- Child may be a “bumper and crasher” frequently seeking intense movement sensations, such as jumping from the top of jungle gym, swinging for a long time, spinning on merry-go-round, darting from one activity to the next, always seeking a new thrill.

How to tell if a child has problems with the Vestibular system



Child can have:

- **Gravitational insecurity** - manifested by abnormal distress and anxiety in reaction to falling or the possibility of falling. The brain overreacts to changes in gravity, even as subtle as standing up. Child avoids movement.

Crave upside down positions - hang over the edge of the bed, hang over the edge of sofa, hang upside down while swinging.

Problems related to poor vestibular functioning



- Slump when sitting, lean head on hands when sitting at the table.
- May be awkward, uncoordinated, and clumsy at playground games.
- Falls often and easily, tripping when moving, bumping into furniture
- Losing balance when someone moves him/her slightly off the center of gravity
- Visual problems. Child may be confused when looking up at the chalkboard and back down to their desk
- Reading problems may arise if child does not have coordination of left to right eye movements.

Problems related to poor vestibular functioning

- **Muscle tone:** Child can have low muscle tone - difficulty with activities that require hand strength such as turning knobs, and may tire easily because resisting the pull of gravity requires a great deal of energy
- **Bilateral coordination:** Child have difficulty using hands and feet together; for example, using both feet together to jump from a ledge or both hands together to catch a ball
- **Motor planning:** difficulty with unfamiliar movements, for example, learning the hokey, pokey
- **Emotional security:** very disorganized in many aspects of life, low self-esteem, “I can’t do it.”

The Vestibular System



- http://www.youtube.com/watch?v=3stsDXki_U

Student exhibits signs of Sensory Processing disorder; Now what do I do?



- Behaviors such as hyperactivity, poor attention, low arousal/energy, emotional outbursts, inappropriate social interactions are signs of sensory system dysfunction
- Observe the behaviors as they occur and use one of the checklists provided to see where the breakdown is, under what sensory system
- Speak to the parents- they will provide insight into behaviors at home, on outings, that may be similar
- Develop a plan to meet the needs of the student

If the problem is Tactile dysfunction



Regularly involve the child in specific activities to improve tolerance for touching things.

Textures – rice bin, sandbox, shaving cream, pudding, jello, finger paint, theraputty, cotton balls, glue, messy play.

Walk on textured carpet pieces bare feet

Vibrating toys

Tortilla Roll-up

Pillow Squish



The goal of these therapeutic activities is to help the child better process a variety of tactile input as well as become less agitated and overwhelmed by typical sensory experiences.

If the problem is Vestibular dysfunction



Ideas to help with vestibular functioning



Encourage activities in which the child is positioned on the stomach, holding the head in an upright position

Playground equipment - merry-go-rounds, slides, swings, teeter totter jungle gym, monkey bars

Jumping (games like leap frog), hopping, skipping

Balance games- walking on a line, twister, skating and bike riding

Spinning games- sit-n-spin, swing, let the child direct the spinning

Jump rope games

Tumbling- somersaults, rolling in all directions

Slow rocking - over a therapy ball, in a rocking chair, on a rocker, rocking horse

Obstacle courses that incorporate lots of head and body movement

If the problem is Proprioceptive dysfunction



Proprioceptive activities can effectively soothe a child who is tactile defensive. Provide heavy muscle work for your child to do, to make them feel their muscles and joints;

Pushing a wheelbarrow

Carrying a stack of books

Jumping on a trampoline



You can also give the input to his body by rolling him up in a weighted blanket or piling cushions or a large bean bag on him:

Use lap weights, play sandwich games, tortilla wrap games.

Speak with School OT about **Brushing** and **Joint compression** techniques

Strategies for the classroom



Example of Sensory strategies used in a classroom.

http://www.youtube.com/v/WZorX_RkuXg

References



The Out-of-Sync Child by Carol Stock Kranowitz

www.kidscando.org/sensory_integration

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www.autismmom.net

Pictures:

Wheelbarrow walking: www.theperfectplaygroundny.com

Popcorn bowl: www.ehow.com/info

Messy fingers: www.OTinfo.org