Sensory Tools for the SLP

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Sensory Processing Disorder

- Sensory Processing - body takes in all different types of information and the brain interprets it and produces a reaction.

- In SPD, the brain does not interpret the information correctly and produces an inappropriate reaction.

- It is often described as a traffic jam inside of the brain.

- [http://www.youtube.com/watch?v=6O6Cm0WxEZA](http://www.youtube.com/watch?v=6O6Cm0WxEZA)
Jane Ayres started working on theory during the 1960s while working with children with learning disabilities.

She developed the Sensory Integration and Praxis Test, which is designed to measure visual, tactile, kinesthetic, and vestibular sensory processing and also motor planning abilities.
Seven senses

- Sight
- Taste
- Smell
- Hearing
- Touch
- Vestibular—where your head and body are in relation to tilt, receptors are in ear canals.
- Proprioceptive—where your body is in space, receptors are in joints and muscles.
Incidence

- Current evidence states that 1 in 20 children have some type of disorder.
- Some studies suggest 1 in 6 people.
- Can be effected in one area or in several areas.
Causes

- Most research points to hereditary and environmental causes
- Brain development and pruning of the brain.
- Pruning - damaged cells die off and new ones are born.
- Critical Phases of pruning - in utero, 0-3 years, 9-13 years
- Current theories suggest that pruning isn’t occurring and there are too many neurons and synapses in the brain to process correctly.
Spinal Cord

Spinal Cord and Nerve Structures

- Spinal Cord
- Base of the Brain
- Nerve Roots
- Peripheral Nerves
- Cauda Equina
Types of SPD

- 3 categories
- Sensory Modulation Disorder
- Sensory Based Motor Disorder
- Sensory Discrimination Disorder
Sensory Modulation Disorder

Sensory Over Response- overreacts by types of clothing, background noise, ordinary (uncontrolled) movements, bright lights, specific smells, intense flavors

Sensory Under Response- resistant to engage in task, eats too much, may not register hunger, difficulty sitting in chair, lacks appropriate registration to pain/temp.

Sensory Seeking-likes crashing, bumping, jumping, rough housing, constantly touches, intrudes on people, music/tv on high volume
Sensory Based Motor Disorder

- Dyspraxia-difficulty with motor skills; clumsy, awkward, and accident prone
- Postural Disorder-poor muscle tone, weakness, difficulty crossing midline or using both hands
Sensory Discrimination Disorder

- Problems with similarities and differences in senses
- Over react or under react to stimuli
- Lack the ability to know how much muscle force to use with tasks. Example: cannot stack blocks because they are too forceful.
What does an OT do?

- OT’s use SI techniques that will eventually generalize into the world.
- Many times we implement a “sensory diet” for home/school to provide the child with input throughout the day.
Avoiders: start small, not a large container. Don’t force them to touch it, it may take a few times before they will touch it.

For gooey substance, you can put it in a ziploc bag and let them squish it.

For the seekers: limit time with it, teach them how to use it appropriately. Example: Finger paint stays on fingers.
These are kids that may or may not have oral motor problems.

OT work with parents to change diet and slowly incorporate more foods into the diet.

Warm up mouth before eating—have the child tap along cheeks and around the mouth.

Overstuffing mouth — input to TMJ or have them eat something sour and gummy before meal.

Straws and suckers are good for calming.

Crunchy food is good for alerting.
Olfactory/Smell

- Can be very sensitive in some children
- Scents can take 20 sec. to produce a change in the brain
- Smell can pull a child into a positive place to facilitate learning.
- Some scents are alerting and some are calming
Scents

- Alerting
- Basil
- Garlic
- Rubber
- Vinegar
- Onion
- Dirt
- Coffee
- Mint
- Calming
- Almond
Vision

- Visual skills start in infancy with sucking to promote iris efficiency and to recognize characteristics of face.

- Vision is necessary for infant interaction with their environment.

- Dysfunction prevents development of basic ocular motor and visual processing skills. Have problems with 2 sides of brain communicating with each other.
Characteristics of Visual Dysfunction

- Can’t tolerate bright lights
- Walking problems
- Turns or tilts head while reading across page
- Confuses likeness and differences in reading
- Poor spatial relations
- Confuse right and left
- Overwhelmed by moving people or objects.
Auditory

- Child may be able to hear, but brain may not process the sound correctly—auditory processing.

- Auditory is also highly connected to vestibular system. Movement facilitates verbalization.

- Child may also be very sensitive to loud noises. This can create a “fight or flight” occurrence.
Vestibular

- Found in ear canals, fluid moves as head moves and tells brain where head and body are in relation to tilt.
- Dysfunction impairs ability to integrate, modulate, discriminate, coordinate, or organize balance and movement.
Vestibular Dysfunction

- Overreact to ordinary movement
- Dislike activities that require coordination
- Dislike inversion
- May get car sick, seasick, dislike elevators or heights
- Needs continual physical support due to gravitational insecurity
- Most problems occur with stop and start action.
- Some of these children cut eyes to side to seek out vestibular input
- OTs look at post-rotary nystagmus—it is often diminished or absent
Vestibular Tools

- Theraball to sit on while at table
- Inflated seat cushions
- Bean or rice filled seat cushions
- Sensory swing
- Ball pit
- Climbing ladder
Proprioceptive

- Tells person where their body is in relation to environment around them.
- Receptors are found in muscles and joints.
- Inefficient processing can disturb tactile and vestibular systems.
Proprioceptive Tools

- Deep touch, not light to skin to stimulate receptors
- System helps to coordinate body parts into different positions.
- Promotes body awareness, motor planning, problem-solving, and self-esteem
Proprioceptive Tools

- Weighted blankets - different sizes for sitting floor or at table
- Weighted vests or body wraps.
- Small tent to help them feel secure - this will also help increase awareness of environment and tasks demands.
- Bean bag chair
Heavy Work

- Try to use as much of body as possible
- Activities include whole body, oral actions, and use of hands
  - Whole body: pushing, pulling, lifting, moving
  - Oral actions: chewing, sucking, blowing
  - Use of hands: squeezing, pinching, and fidgeting
Brushing and Joint Compression

- Provides input and body awareness
- Can be used as a calming technique and allow child to be more aware of body
References

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