



SENSORY PROCESSING DISORDERS

Sensory processing (previously called sensory integration) is a normal neurological process which allows the nervous system to take in information from the body and environment such as touch, sound and movement, and then organize this information to make a meaningful response. Some of the senses that our bodies use include:

Vestibular Sense—The receptors for the vestibular system are located in the inner ear. This system responds to changes in head position and to body movement in space. This is our most primitive sense and tells us where our body is in space. It is closely linked to our balance, eye movements, language, hearing and ability to move through space.

Proprioceptive Sense—These receptors are located in the muscles and joints of our bodies. This sense allows us to know where our bodies are located in space, and how much pressure to use when manipulating objects.

Tactile Sense—These receptors are located in the skin which gives us information about touch pressure, vibration, temperature and pain.

People with Sensory Processing Disorder (SPD) do not experience sensations the same as other people. They may be overly responsive and will then avoid the sensations, or they may be under responsive and seek out extra sensations. There are several types of Sensory Processing Disorders which may each result in a different behavioral and sensory pattern.

Sensory-Avoiding Children

These children are over-responsive to sensations, as a result their nervous systems feel sensations too intensely and they feel as if they are being constantly bombarded with information. As a result, they may have a “fight or flight” response to sensation, a condition known as “sensory defensiveness”. The following behaviors may be seen in these children:

- Respond to being touched with aggression or withdrawal
- Fearful reaction to ordinary movement activities such as playground play, swinging or climbing
- Limit clothing choices due to textures, intolerant of tags in clothes, seams in socks, or has to have clothing perfectly straight with no wrinkles
- Covers ears to sound or “acts out” in loud or busy environments
- Very picky eater
- Overly sensitive to smells

Journey Learning Center

2100 W. Northwest Hwy, Suite 202, Grapevine, Texas 76051

Sensory-Seeking Children

These children are under-responsive to sensations; as a result their nervous systems do not always recognize the sensory information that is coming to the brain. As a result, they may seek out constant stimulation or more intense or prolonged sensory activities. The following behaviors may be seen in these children:

- Unaware of touch or pain. Touching people and things to the point of irritating others. May touch others too often or hard which may appear to be aggressive behaviors.
- Seek out intense sensory experiences such as body whirling, falling, crashing into objects or climbing too high. Takes part in unsafe activities.
- Over activity as they seek out more sensation, moving constantly, rocking, spinning or fidgeting.
- Enjoy sounds that are too loud, such as loud television or radio.
- Makes noises with mouth or will talk constantly.

Motor Skills Problems

Other children with SPD have trouble processing sensory information properly, resulting in problems with planning and carrying out new actions. They have particular difficulty with developing new motor skills such as riding a bike, jumping a rope or handwriting. These children may often appear clumsy, awkward or accident prone. The following behaviors may be seen in these children:

- Very poor fine motor skills, such as handwriting, buttoning or putting together Lego's.
- Very poor gross motor skills such as kicking, running, throwing, catching, hopping and skipping.
- Trouble with balance, sequences of movements and bilateral coordination (using the two sides of the body together in a coordinated movement, such as moving arms correctly when running).
- A preference for sedentary activities, such as watching TV, reading a book or playing video/computer games.
- Become easily frustrated, may seem manipulative and controlling.
- Some children may try to compensate with an over-reliance on language and may prefer fantasy games to real life.
- May try to mask their motor planning problems by acting like the "class clown" or avoiding new group activities.

What Can Be Done to Help?

Intervention provided by a trained occupational therapist can facilitate improved processing of sensory input resulting in a decrease in sensory defensiveness, a decrease in sensory-seeking behaviors and improved motor skills. Some of the treatment techniques that an occupational therapist (OT) may use include:

Sensory Integration Therapy: This is one type of treatment that a therapist may use. This type of therapy should only be performed by a therapist who has received specialized training. Therapy consists of the therapist designing an environment which will provide the child with the “just right challenge” to enable the child to interact with the environment more successfully. The therapy environment will consist of specially designed suspended equipment to meet the needs of the child. By carefully balancing structure and freedom, the therapist helps the child to develop both his neural organization and his inner direction.

Sensory Diet: The concept of a “sensory diet” was formulated by Patricia Wilbarger, MEd, OTR. The sensory diet consists of providing planned activities during the day, which provide vestibular and proprioceptive input. It also consists of an intensive approach of applying rapid and firm pressure touch to the arms, hands, back, legs, and feet with a non-scratching brush with many bristles. It is important that these techniques be prescribed and monitored by a therapist who has specialized in treating sensory defensiveness.

References and Suggested Reading:

Sensory Processing Network (SPD) at www.spdnetwork.org

Therapeutic Listening™ web site: www.vitallinks.net

Kranowitz, C.S. (1998). *The Out-of-Sync Child: Recognizing and Coping with Sensory Integration Dysfunction*. New York: Perigee Books (Penguin Putnam).

Wilbarger, P., & Wilbarger, J. (1990). *Sensory defensiveness in children ages 2-12: An intervention guide for parents and other caretakers*. Denver, CO: Avanti Education Products.