

# Sensory Processing Disorder

## Definition:

Sensory Processing Disorder (also known as Sensory Integration Disorder) is the inability to respond “appropriately” to ordinary experiences. A person with SPD has difficulty integrating information from the five classic senses (vision, auditory, touch, smell, and taste), the sense of movement (vestibular system), and/or the awareness of the body’s position in space (proprioception).

## Description:

Sensory processing is the procedure in which we take in messages from our bodies and our surroundings. When sensory processing is typical, we interpret these messages and organize our purposeful responses. For example, think about what occurs when you climb a ladder. Your brain processes sensations such as your body moving upward and changing positions, you can feel your clothes touching your skin and your hands and feet touching the ladder. We integrate this information and then make adaptive responses such as moving our feet up the ladder rungs, lifting our own weight against gravity, and maintaining our balance.

Individuals with sensory processing disorder have difficulty interpreting these sensory messages. Individuals with SPD may sense information normally, but the information is perceived abnormally and may cause discomfort, pain or confusion.

## Characteristics:

A person with SPD finds it difficult to process and act upon information received through the senses, which creates challenges in performing everyday tasks. An individual with sensory processing disorder may exhibit one, many or all of the following characteristics:

- Hypersensitivity: Overly sensitive to touch, movement, sights, or sounds
- Hyposensitivity: Under reactive to touch, movement, sights, or sounds
- Difficulty self-regulating state: Activity level that is unusually high or unusually low
- Decreased proprioceptive awareness: Difficulty knowing where one’s body is in space

Other characteristics can include:

- Easily distracted
- Physical clumsiness or apparent carelessness
- Impulsive
- Difficulty making transitions from one situation to another
- Poor self concept
- Lacking in self control
- Social and/or emotional problems
- Inability to unwind or calm self
- Delays in speech, language motor skills or academic achievement

## Causes:

Although a direct cause of SPD is unclear, we know that a discrepancy in the sensory integration process is the root of this disorder. The mid-brain and brainstem regions of the central nervous system are early centers in the processing pathway for sensory integration. Preliminary research suggests that SPD could be inherited. Prenatal and birth complications and environmental factors may also contribute to SPD. SPD often co-occurs with other disorders, such as autism, but not always.

### **Implications for speech and language:**

Individuals with SPD often have speech and language impairments. Speech and language development requires several foundational processes including, but not limited to, the integration of auditory and visual stimuli, motor planning and proprioceptive knowledge of the body in space. Difficulties in these and other areas of sensory processing can negatively affect speech and language development.

### **Diagnosing this disorder:**

Speech-language pathologists do not diagnosis SPD, but pediatricians and developmental specialists can diagnose SPD. SPD is not yet recognized in the Diagnostic and Statistical Manual of Mental Disorders-4 (DSM-4), but research is currently being completed to gather more information on the disorder.

### **Treatment:**

Treatment for SPD is usually provided by occupational therapists. Treatment focuses on integrating a variety of senses including sight, sounds, smell, touch (tactile sense), proprioceptive sense, and vestibular senses. Goals for sensory integration therapy are unique to each child and vary greatly depending on the child's specific difficulties and challenges.

Areas of treatment may address:

- Gross motor skills
- Fine motor skills
- Motor planning/praxis
- Postural control
- Coordination
- Balance
- Strength

### **Resources:**

#### **Books for kids:**

- *Squirmy Wormy: How I Learned to Help Myself* by Lynda Farrington Wilson
- *Why Does Izzy Cover Her Ears? Dealing with Sensory Overload* by Jennifer Veenendall
- *Ellie Bean the Drama Queen: A Children's Book about Sensory Processing Disorder* by Jennie Harding

#### **Books for Parents:**

- *The Out of Sync Child* by Carol Stock Kranowitz
- *Sensational Kids: Hope and Help for Children with Sensory Processing Disorder* by Carol Stock Kranowitz
- *Raising a Sensory Smart Child* by Lindsey Biel and Nancy Peske

#### **Support Groups:**

- The Austin Area Alliance: SPD <http://austinspd.net/>

#### **Websites:**

- Sensory Processing Disorder Foundation <http://www.sinetwork.org/>
- Sensory Processing Disorder Resource Center <http://www.sensory-processing-disorder.com/>

**References:**

Miller, L. J., & Fuller, D.A. (2006). *Sensational Kids: Hope and Help for Children With Sensory Processing Disorder*. New York: Perigee.

Stock Kranowitz, Carol. (2005). *The Out of Sync Child*. New York: Penguin Group.

Wiley, S. & Moeller, M. (2007, January 23). Red Flags for Disabilities in Children who are Deaf/Hard of Hearing. Retrieved from <http://www.asha.org/Publications/leader/2007/070123/f070123b.htm#6>