

# Sensory Integration Dysfunction

BIRTH DEFECT RESEARCH FOR CHILDREN



## What is Sensory Integration Dysfunction?

Sensory integration is the process of receiving information from the senses (sight, touch, taste, smell, hearing, and perception of movement and gravity); putting it together with memories, knowledge, and information stored in the brain; and making a meaningful response. A dysfunction in sensory integration (DSI) means a child cannot process and interpret the information correctly because his brain has problems analyzing and organizing the information from his senses in a unified way. This prevents him from forming a picture of who he is physically, where he is, and what is happening around him. Because sensory integration provides an important foundation for future complex learning and behavior, DSI can affect academic learning, motor skills, social skills, and self-esteem.



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How many children have DSI?

Ten percent of children may be affected by DSI. Approximately 30% of school-aged children are estimated to have learning disabilities, and research indicates that many of these children have sensory integration problems.

How do you know if your child has DSI?

Common symptoms of DSI include problems with behavior and self-control; delays in speech, language, academics, and motor skills; social and emotional problems. Sensory processing problems can encompass over-sensitivity and under-sensitivity to certain stimuli and can cause the child to react with aggression or withdrawal.

Over-sensitivity examples include:

- Sight: Extreme reactions to bright lights, excitability from too many visual stimuli.
- Touch: Extreme reactions to another person's light touch or certain textures of clothing.
- Taste: Strong objections to certain tastes.
- Smell: Strong objections to perfumes or aromatic foods.
- Hearing: Strong objections to noises that don't bother most people such as a dripping faucet.
- Perception of movement/gravity: Avoidance of crawling, running, or swinging because the child feels off balance.

Under-sensitivity examples include:

- Sight: Inability to coordinate visual clues, which results in the child touching everything he sees.
- Touch: A child who is unaware of pain or doesn't react to banging into objects or touching something hot
- Taste: Tasting inedible objects such as toys or craving spicy foods.
- Smell: Frequently sniffing objects or ignoring smells that are repulsive to others.

- Hearing: Oblivious to someone calling his name or problems following oral directions.
- Perception of movement/gravity: Excessive movement such as rocking and fidgeting.

These symptoms, behaviors, and learning problems can be due to other factors such as allergies or vision problems and can be linked to attention deficit problems and autism. Therefore, a correct diagnosis is important. Parents and professionals are advised to carefully observe the pattern of the child's behavior and how his problems interfere with his play, emotional and physical development, and independence.

DSI was initially described by an occupational therapist and is not yet well known in the medical field. Many pediatricians do not recognize it as a disorder and do not know that therapy is available; thus, it often goes undetected or misdiagnosed. If you suspect DSI, a certified occupational or physical therapist can conduct an evaluation. An evaluation usually includes standardized testing, structured clinical observations of the child, and parent/teacher interviews. For children ages 4-8, the Sensory Integration and Praxis Test is usually used. A comprehensive developmental and behavioral evaluation can take 8-10 hours. A developmental evaluation team knowledgeable in DSI is often recommended. The team should include a pediatrician, psychologist, occupational therapist, and speech/language pathologist.

What causes DSI?

The cause of DSI is unknown. Many children with DSI were born prematurely or with low birth weight. Others experienced a lack of sensory stimulation, or experienced too much sensory stimulation such as from abuse. Sometimes a child with DSI had a relative with similar symptoms. DSI can occur in children who have been institutionalized for more than a year, were hospitalized early in life or for long periods of time, or who have suffered trauma and

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disruption in their developmental process.

How can you help a child with DSI?

Early diagnosis of DSI is important. An evaluation team of specialists will make recommendations regarding appropriate treatment based on a child's needs. Occupational therapy is often recommended. The child will be guided through activities that challenge his ability to respond appropriately to sensory input. The goal of therapy is to enable the child to engage in the normal activities of childhood. Occupational therapy enhances the child's ability to process lower level senses related to touch, body movement and position, and alertness. This allows the child to focus more attention on the higher level senses of sight and hearing. You should read as much information as possible on DSI. This knowledge will help you understand your child's reactions and behaviors. This understanding will prepare you and your child to face or avoid the situations which affect him.

What's in the future for a child with DSI?

Early diagnosis and appropriate treatment for DSI can significantly improve a child's developmental progress. Therapy specific to the child's type of Sensory Integration Dysfunction can be very successful. Children don't necessarily grow out of DSI symptoms or experience a cure. However, therapy may change the way the child's brain experiences sensations which can help the child respond in a more normal way. Early detection and therapy can help children gain competence in learning and motor skills, which minimizes inappropriate behavior, improves social skills, and helps the child maintain self-esteem. With therapy, children with DSI can have a better quality of life and lead more productive lives.

Fact Sheet by:

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