SENSORY INTEGRATION FREQUENTLY ASKED QUESTIONS

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What are some signs of Sensory Integrative Dysfunction?

- Overly sensitive to touch, movement, sights, or sounds
  Under reactive to touch, movement, sights, or sounds
  Easily distracted
  Social and/or emotional problems
  Activity level that is unusually high or unusually low
  Physical clumsiness or apparent carelessness
  Impulsive, lacking in self control
  Difficulty making transitions from one situation to another
  Inability to unwind or calm self
  Poor self concept
  Delays in speech, language, or motor skills
  Delays in academic achievement

What is sensory integration?

- The senses work together. Each sense works with the others to form a composite picture of who we are physically, where we are, and what is going on around us. Sensory integration is the critical function of the brain that is responsible for producing this composite picture. It is the organization of sensory information for on-going use.

For most of us, effective sensory integration occurs automatically, unconsciously, without effort. For some of us, the process is inefficient, demanding effort and attention with no guarantee of accuracy. When this occurs, the goals we strive for are not easily attained.

Sensory experiences include touch, movement, body awareness, sight, sound, and the pull of gravity. The process of the brain organizing and interpreting this information is called sensory integration. Sensory integration provides a crucial foundation for later, more complex learning and behavior.

For most children, sensory integration develops in the course of ordinary childhood activities. Motor planning ability is a natural outcome of the process, as is the ability to adapt to incoming sensations. But for some children, sensory integration does not develop as efficiently as it should. When the process is disordered, a number of problems in learning, development, or behavior may become evident.

The concept of sensory integration comes from a body of work developed by A. Jean Ayres, PhD, OTR. As an occupational therapist, Dr. Ayres was interested in the way in which sensory processing and motor planning disorders interfere with daily life function and learning. This theory has been developed and refined by the research of Dr. Ayres, as well as other occupational and physical therapists. In addition, literature from the fields of neuropsychology, neurology, physiology, child development, and psychology has contributed to theory development and intervention strategies. Ayres (1972) defines sensory integration as "the neurological process that organizes sensation from one's own body and from the environment and makes it possible to use the body effectively within the environment" (p. 11). The theory is used to explain the relationship between the brain and behavior and explains why individuals respond in a certain way to sensory input and how it affects behavior. The five main senses are:

- Touch - tactile
- Sound - auditory
- Sight - visual
- Taste - gustatory
- Smell - olfactory

In addition, there are two other powerful senses:

- vestibular (movement and balance sense)—provides information about where the head and body are in space and in relation to the earth's surface
- proprioception (joint/muscle sense)—provides information about where body parts are and what they are doing.
  Who has problems with sensory integration?

- You may know a child who, although bright, has difficulty using a pencil, playing with toys, or doing self-care tasks, like dressing. Perhaps you have seen a child so fearful of movement that ordinary swings, slides, or jungle gyms generate fear and insecurity. Or maybe you have observed a child whose problems lie at the opposite extreme uninhibited and overly active, often falling and running headlong into dangerous situations. In each of these cases, a sensory integrative problem may be an underlying factor. Its far-reaching effects can interfere with academic learning, social skills, even self-esteem.

  Research clearly identifies sensory integrative problems in children with developmental or learning difficulties. Independent studies show that a sensory integrative dysfunction can be found in some children who are considered learning disabled by schools (reference: Daems, Joan (Ed).(1994). *Reviews of Research in Sensory Integration*. Torrance, CA: Sensory Integration International)

  Sensory integrative problems are not confined to children with learning disabilities, however. They transect all age groups as well as all intellectual levels and socio-economic groups.

What steps can be taken?

- If a child is suspected of having a sensory integrative disorder, a qualified occupational or physical therapist can conduct an evaluation. Evaluation usually consists of both standardized testing and structured observations of responses to sensory stimulation, posture, balance, coordination and eye movements. After carefully analyzing test results and other assessment data along with information from other professionals and parents, the therapist will make recommendations regarding appropriate treatment.

  If therapy is recommended, the child will be guided through activities that challenge his or her ability to respond appropriately to sensory input by making a successful, organized response. Standards are available from Sensory Integration International.

  Training of specific skills is not usually the focus of this kind of therapy. Adaptive physical education, movement education and gymnastics are examples of services that typically focus on specific motor skills training. Such services are important, but they are not the same as therapy using a sensory integrative approach.

  One important aspect of therapy that uses a sensory integrative approach is that the motivation of the child plays a crucial role in the selection of the activities. Most children tend to seek out activities that provide sensory experiences most beneficial to them at that point in development. It is this active involvement and exploration that enables the child to become a more mature, efficient organizer of sensory information.

Where can I learn more?

- The most important step in promoting sensory integration in children is to recognize that it exists and that it plays an important role in the development of a child. By learning more about sensory integration, parents, educators and caregivers can provide an enriched environment that will foster healthy growth and maturation.

  For more information:

  Write to Sensory Integration International at: 1514 Cabrillo Avenue, Torrance, CA. 90501-2817

Examples of **Sensory Integration Dysfunction (DSI)?**

Dysfunction in sensory integration is the "inability to modulate, discriminate, coordinate or organize sensation adaptively" (Lane et al., 2000, p. 2). How efficiently we process sensory information affects our ability to:

- ***discriminate sensory information*** to obtain precise information from the body and the environment in order to physically interact with people and objects. An accurate body scheme is necessary for motor planning, i.e., being able to plan unfamiliar movements. It involves having the idea of what to do, sequencing the required movements, and executing the movements in a well-timed, coordinated manner.

Michael frequently bumps into others and drops items on the way to class because of his poor body scheme. He often hands in crumpled assignments that reflect the challenges of holding a pencil in his hand and making precise movements to achieve legible handwriting. Concentrating on his schoolwork intensely may lead him to fall off his chair. To most people, Michael appears to be a sloppy, clumsy, and forgetful child.

In gym class, Michael cannot master jumping jacks, somersaults make him feel sick, and he has given up on ever being able to connect with a baseball. His timing was always off. He resorts to being the class clown to cover up for his difficulties. Michael certainly doesn't feel good about himself. He can't do what other kids seem to do so effortlessly-and then there is the teasing...

- ***modulate sensory information*** to adjust to the circumstances and maintain optimum arousal for the task at hand. Sensory modulation is the "capacity to regulate and organize the degree, intensity and nature of responses to sensory input in a graded and adaptive manner" (Miller & Lane, 2000).

Sensory defensiveness, a type of sensory modulation problem, is defined by Wilbarger and Wilbarger (1991) as "a constellation of symptoms related to aversive or defensive reactions to non-noxious stimuli across one or more sensory systems" (Wilbarger & Wilbarger, 2002a, p. 335) It can affect changes in the state of alertness, emotional tone, and stress (Wilbarger & Wilbarger, 2002a).

Michael demonstrates many symptoms of sensory defensiveness, which affect his attention, learning, and behavior. His teacher's instructions get lost in competition with a clock ticking, the echo of peers walking and talking in the hall. He is off task and he finds solace in humming or chewing on the end of his pencil, sensory seeking behaviors that help ease the discomfort. Fortunately, he has gym class before lunch. Running bases in gym class gives him a legitimate opportunity for the "heavy work" that his body needs. It sure makes him feel better and prepares him for the biggest challenge of all-eating lunch in the school cafeteria.

If there are any further questions or clarification needed, please feel free to contact me through the Special Education Department or your child's special education teacher.

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The Sensory Integration Resource Center provides links to Internet resources and research about Sensory Integration Dysfunction (DSI) for parents, educators, occupational therapists and physicians. Available: www.sinetwork.org/