

What is Sensory Integration?

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According to Dr. Jean Ayres, sensory integration is “the ability to synthesize, organize, and process incoming sensory information received from the body and the environment to produce purposeful goal-directed responses.” Dr. Ayres developed this theory as an attempt to explain why children with mild-to-moderate learning or behavioral problems demonstrated certain characteristics. The children she observed were usually clumsy, demonstrated poor motor planning skills, and had specific likes and dislikes when it came to various sensory stimulation (e.g., movement, textures of clothing and /or food). In her hypothesis, she concluded that these children were able to receive the input from the sensory stimulation via the sensory receptors, but the sensations weren’t being processed or integrated correctly with the brain and brain stem. As a result, the children were unable to have appropriate and effective adaptive responses. For example, if a child is swinging on a swing and feels sick, an appropriate response is to jump off or stop the swinging. If a child’s brain doesn’t register that excessive movement is going to make him ill, he might stay on the swing too long and vomit. This would be an inappropriate adaptive response.

What is Sensory Integration Dysfunction?

Sensory integration dysfunction is a term used to describe a person who has difficulty with the processing of sensory input. There are several types of sensory integration dysfunction. Dysfunction can occur with a specific sensory system or with many systems (global). A person can have vestibular dysfunction, meaning that his or her brain isn’t correctly processing information coming from the vestibular receptors located inside the ears; tactile dysfunction, in which tactile stimulation coming from the skin isn’t being processed correctly; or a person can have global sensory dysfunction, which is a combination of sensory systems that are not integrating correctly.

Input from three basic senses (touch, movement, position) combined with the auditory and visual senses are critical to the development of mature motor planning, coordinated use of both sides of the body, balance, eye-hand coordination, body awareness, language, visual perception, and emotional stability.

Emotions, Behaviors, and Self-esteem

According to James Battle (1990), a child with high self-esteem

- responds effectively to internal and external environmental demands,
- feels loved and lovable by significant others
- has a positive relationship with his or her peers
- feels he or she is as smart as his or her peers
- feels that peers respect his or her opinions, and
- is satisfied with his or her performance at school.

A child with sensory integration dysfunction experiences frustrations and inadequacies, and often exhibits behavior problems, poor social relationships, and low self-esteem. Addressing those dysfunctions in therapy can reduce frustrations and build skills so that the child feels capable, successful, worthy, and important.

Symptoms of Sensory Integration Dysfunction:

Teachers or parents often observe the following symptoms/behaviors that may lead to a referral for an evaluation of the sensory systems. This evaluation usually is done by an occupational therapist.

Postural Control

- slouches
- props head when sitting
- uses support when standing

Fine Motor

- difficulty manipulating objects such as scissors, blocks, beads
- awkward grasp on objects such as pencils (too tight or too weak)
- difficulty tying shoes, buttoning shirt

Gross Motor

- skipping, hopping, running are awkward or impossible to do
- stumbles
- bumps into things

Perceptual Skills

- difficulty matching objects
- loses place when copying or reading
- difficulty putting together puzzles

Cognitive Skills

- distractible
- unable to transfer/generalize skills
- usually an average IQ

Psychosocial Skills

- poor self-esteem
- throws tantrums
- gets frustrated easily

Sensory Processing

- hypersensitive to sensory stimuli (e.g., loud noises)
- touches everything/nothing

- hates being hugged/loves physical contact
- lethargic/unusually active

Please note that the behaviors listed above may also appear in children with other diagnoses. Sensory problems can be concurrent with other diagnoses, but a diagnosis of sensory integration dysfunction can occur without the presence of frank neurological insult (no known brain or nerve damage).