

# What Is Sensory Integration?

**Sensory Integration** refers to both a neurophysiological theory and a treatment approach, both originally developed by Dr. A. Jean Ayres, Ph.D., OTR, FAOTA. Sensory integration is the process by which the nervous system processes and integrates information received through the senses. When faulty or inefficient sensory processing occurs, a myriad of functional challenges may exist. These challenges might include heightened reactivity to sensation, decreased reactivity to sensation, difficulties with motor planning and coordination, difficulties with attention, difficulties with learning, and difficulties with regulation and organization of behaviour.

Sensory integrative treatment is a child-directed, developmental approach. It is an approach that lends itself well to coordination with other philosophical frameworks and treatment modalities.

Sensory integration or sensory processing disorders are generally classified under three different categories. These categories are distinguished as challenges with:

- Sensory modulation
- Sensory discrimination
- Sensory-based motor issues

**Sensory modulation challenges** are characterized by an inability to grade the degree, intensity and nature of the response to sensory input. Often the child's responses do not fit the demands of the situation, interaction or environment. The child often demonstrates difficulty achieving and maintaining an optimal range of performance and adapting to challenges in daily life. Children may be generally over-reactive, under-reactive or demonstrate fluctuating or mixed levels of reactivity to sensation.

**Sensory discrimination challenges** are characterized by problems discerning the specific qualities or attributes of sensory stimuli. The result is decreased capacity to interpret or give meaning to the specific qualities of stimuli, to detect similarities and differences among stimuli, and to differentiate the temporal (time) and/or spatial qualities of stimuli.

**Sensory-based motor challenges** include challenges related to posture and to praxis.

**Postural challenges** refer to difficulty stabilizing the body during movement and/or at rest in order to meet the demands of the environment or a given motor task. Postural difficulties frequently occur in conjunction with problems in the vestibular, proprioceptive, and visual-motor systems and include poor stability in the trunk, poor righting and equilibrium responses, poor trunk rotation and/or poor ocular control.

**Dyspraxia** is an impairment in the ability to plan, sequence and execute novel or unfamiliar actions. It is characterized by awkward and poorly coordinated performance, which can be observed in gross motor, fine motor and/or oral motor abilities. Execution of discrete motor skills (i.e. standing, walking, pincer grasp) may be adequate. However, the performance of complex tasks may be compromised, including tasks that require one or more of the

following: significant sequencing, important timing aspects, rhythm of motor action, or subtle adaptation in the “moment of action.”

Reference: Diagnostic Manual for Infancy and Early Childhood: Mental Health Disorders, Development Disorders, Regulatory-Sensory Processing Disorders, Language Disorders, Learning Challenges (2005); Interdisciplinary Council on Developmental and Learning Disorders.