

## **Sensory motor skills: Fact Sheet**

### **Center for Speech, Language and Occupational Therapy**

Sensory motor skills are the basic foundation for learning. All the activities and movement we did as infants, toddlers and children help prepare our body and our brain to learn. These skills are essential to develop the ability to participate in classroom activities and affects academic achievements. Physical activities promote dual processing of the brain which means the integrated use of both our brain's hemispheres which research shows is imperative to learning.

Sensory and motor skills build on the foundation of our innate abilities. Sensory skills are those such as vision, hearing, touch, smell, taste, vestibular (for balance and head position in space), and proprioception (information from the muscles and joints). They are responsible for receiving information. Motor skills relate to muscles and movement and include crawling, walking, running, handwriting, and speaking. Motor skills give expression to the information our senses receive and process.

Sensory motor skills comprise of:

- 1 Body in space – Knowing where our body is in space helps know where we are in relation to people and objects and leads to the development of visual motor skills. Visual motor skills are essential in the areas of learning to write, social interaction by knowing boundaries of proximity and even driving as we get older.
- 2 Laterality – knowing how to cross midline of the body, knowing right from left and also eye movements comprise of laterality. The development of this skill is essential in learning how to read, write and also for our brain to work in a proficient song.
- 3 Balance- Development of balance is promoted through the use of our vestibular system present in our inner ear. A higher level of balance has been shown to stimulate the growth and enlargement of neural networks which in turn cause the communication systems to grow and develop.
- 4 Centering – Centering is the ability to cross the midline top to bottom. If centering is not developed, a student will walk completely disconnected, as though the legs are working independently of the rest of this body. This leads to poor coordination in sports; disorganization in his room and classroom desk; messy personal appearance; this child is overwhelmed

**Vestibular Sense:** This complex system is located in our inner ear and consists of gravity receptors that detect linear (such as running straight or swinging back and forth) and rotary (spinning) movements. The vestibular system allows us to know where our body is in relation to space. It causes us to keep our balance and make sure that we are safe in our environment. This system plays a very important role in terms of organizing which sensory input is and is not important in order to have an optimal level of focus and attention.

**Proprioceptive Sense:** Refers to the sensory input and feedback that tells us about movement and body position. It's "receptors" are located within our muscles, joints, ligaments, tendons, and connective tissues. If the proprioceptive sense is not receiving or interpreting input correctly within these muscles, joints etc. it manifests itself as kids who are clumsy, uncoordinated, and have difficulty performing basic normal childhood tasks and activities. Without proper messages regarding whether muscles are being stretched, whether joints are bending or straightening, and how much of each of these is happening, children will have difficulty "motor planning"; i.e. conceptualizing and figuring out what each part of his body needs to do in order to move a certain way or complete a task and difficulty executing those planned movements: i.e. motor control.