

UNDERSTANDING THE SENSORY SYSTEMS AND SENSORY PROCESSING

There are three sensory systems that work together on a subconscious level. They help us sense touch, movement, force of gravity and body position and body structure. The information picked up from these systems goes to the nervous system and prepares us to react for our safety and function. In the TACTILE SYSTEM, cells in our skin provide information about touch, pain, temperature and pressure. In the VESTIBULAR SYSTEM structures within the inner ear provide information about where our head is in space and our bodies react with balance. In the PROPRIOCEPTIVE SYSTEM muscles, joints and tendons provide information for us to form an internal sense of our body position and body makeup.

THE TACTILE SYSTEM (the sense of touch):

The touch system is important for our safety and function in our daily lives. Touch can be very important when used in place of our vision when we are searching for an object through the tactile system. For example when it is dark and we are looking for something through feel. It is also an important system to determine if we are safe when something touches us lightly or is pressing against us with more force. For example, distinguishing a fly landing on our skin versus a heavy board starting to fall against us. We can feel this and deal with the sensations with an automatic reaction through the sensory system.

THE VESTIBULAR SYSTEM (the sense of movement):

The vestibular system senses body movement when moving through space. It also senses changes in head position. This system combines the eyes, head and body to work together automatically. It also affects muscle tone, coordination and maintaining an upright posture. This system supports the body in maintaining balance as we change where we are looking from far to near. This system assists a child to copy off the board or maintaining balance as the ground level surface changes.

PROPRIOCEPTION (the sense of body position and body make up):

This system gives us an internal awareness of how we are shaped and how we are positioned. This is the system that when you close your eyes, you can feel where your arms or your legs are positioned. This system helps a child know internally that they are lifting their knee, and therefore foot, up enough to clear the bus step. It also helps a child in P.E. when another child is running near them: the child will not have to strike out in protection. Proprioception provides awareness of personal space boundaries.

These three systems work together closely to provide us a subconscious message that we are safe. They help us gather information and form a protective response (as when we trip and our head goes off center and the body responds) or ignore the input because it is not dangerous (as when a fly lands on our leg). These systems begin working before birth and are very complex. Sometimes they do not develop fully or are damaged. They display a variety of characteristics in each individual. It is helpful for teachers/caregivers to understand why a child's body responds to certain stimuli or that they seek stimuli. Sometimes a child can receive a "dose" of a certain suggested activity that will engage a sensory system and fill this need for a section of time or forever or "fill their cup". It is also important to distinguish whether the child is acting out with a behavior or if their body is reacting to sensory stimuli. Sensory processing/integration is a complex process but knowing more about these systems can be very helpful in understanding a response or reaction in a child.