Neurodevelopmental Approach for Learning and Sensory Integration Inefficiencies

A Learning Disability is a hidden condition: the person's ability to process information is inefficient in one or more areas. Those who manifest these symptoms will say that they feel "stupid." Like this comment: "I just can't figure out what the teacher is saying. So I just stare and I think: "Am I the only person in the world who is so dumb?" Receiving the label of "Learning Disability" somehow alleviates this depressive feeling in providing a reason for the person's learning difficulties. However, it is only when some of the root causes are identified that pertinent interventions can be planned. The neurodevelopment approach is one of the best intervention to efficiently address these difficulties and increase the person's brain processing.

Learning difficulties lie in some of the central nervous system's inefficient functions. Interruption of the natural development of the central nervous system (CNS) brings incomplete brain organization that prohibits the individual from achieving his maximum potential. The sequential development of the CNS from birth, and the simultaneous development of functions in the vision, auditory, tactility, language, mobility, and manual domains should lead to optimal brain organization. The person with learning difficulties cannot access his potential because of neurodevelopmental interruptions.

Specific inefficiencies are identified by looking at what and how the person's brain is receiving information through the different senses. Consideration is given to how the skin and the muscles, the ears, and the eyes are communicating the proper information to the brain. For example, convergence is often a problem.

Convergence is the ability of the two eyes to work synchronously together. When the eyes do not converge, a degree of double vision is experienced which confuses the person who will then "squint" in his attempt to eliminate the double vision. Eye exercises can correct this problem. Another problem is the difficulty to multi-task. Often these children have not developed an efficient cross-pattern movement and are lacking in their processing speed. Sequential rhythmic developmental exercises can benefit them. Understanding how the person's brain receives the information allows, in subsequent steps, to concentrate on how he processes, stores and utilizes information.

Attention span limitations are frequently involved with learning disabilities. Attention problems present a wide range of symptoms. One of the frequent symptoms is a weak tactile function also known as delay in sensory integration. People who experience sensory distortion often display learning difficulties. Each of the five senses has specific functions in the learning process that channels the information to the brain. When facing behaviour problems such as impulsivity, hyperactivity, aggressivity, and reduced attention span, investigating the sensory system broadens our perspective and increases our efficiency in treating the symptoms. We recognize two types of sensory dysfunction: the “hyper” which leads to an over-sensitive reaction to information, and the “hypo” which yields an under-sensitive state.

Children who always ask to remove tags from the back of their clothes are hyper-sensitive to surface touch. Individuals who are high tolerant or “very tough” while facing pain, for example, a child complaining of ear infections only when the eardrum bursts, would be considered hypo-sensitive to deeper touch. These hypo-tactile children rarely keep still. They often need to feel pressure and consequently will move, lean on or over things, and can be aggressive toward other children.

The person who is sensitive to sunlight and fluorescent lighting would be considered hyper-visual. The hypo-sensory visual child will have difficulty in keeping order in his room even though his mind is able to perceive complex, three-dimensional designs.

People who are hyper-sensitive to noises will be easily distracted in a larger group or to any sharp sounds. These hyper-auditory individuals have difficulty concentrating because they do not adequately filter noises. They will often disconnect from the environment if they are forced to stay in this auditory overload.

These brains seem to misinterpret the information brought from the senses. The objective of the treatment is to normalize the brain’s perception of information received by the senses. The treatment, through specific and targeted repetition of sequential activitiess, aims at re-organizing functions of the central nervous system (CNS) responsible for an efficient learning process. Neuroplasticity (new pathways can be generated in the brain) and repetition allow these CNS pathways to be permanent and constitute the basis for the therapeutic training.