

Sensory Regulation of Children with Barriers to Learning



What is Sensory Dysregulation?

- When we talk about sensory processing difficulties or sensory integration dysfunction, we are talking about some disturbance in the child's ability to process sensory input. It could be a disturbance in just one of the sensory systems, or it could involve two or more systems.
- While this brief overview will focus on three systems (tactile, vestibular, and proprioceptive), parents and teachers need to keep in mind that the child can have sensory defensiveness in any of the sensory systems. For example, some children will find certain sounds intolerable (such as the bell signalling change of periods, or noises in the hallway), while other children may find particular smells or tastes intolerable. Any kind of sensory defensiveness can make it difficult for the child to function normally in a school setting or to engage in normal social activities with peers.

The Tactile Sensory System

- The **tactile** (touch) system provides information on light touch, pain, temperature, and pressure. If a child suffers from dysfunction in the tactile system, he may experience light touch or a gentle hug as intense or aversive, he may find certain kinds of fabrics or clothing irritating, may refuse to eat foods of a particular texture, and may avoid touching or handling certain kinds of objects. We say that a child is “tactile defensive” when he or she is extremely sensitive to light touch. When touched, it is as if the brain is flooded with an overload of sensory input that it cannot process, and the child’s response may be disorganized and emotional. How often do we attempt to gently refocus a distracted child with a light touch on the shoulder? How often have we seen a child who seems to be having an exaggerated pain response to something that we know was “just minor?” Perhaps we think that the child is just a “drama queen” or attempting to get our attention, but could it be that they are really perceiving the sensory input differently than we do?

The Vestibular Sensory System

- The **vestibular** system involves structures within the inner ear (the semi-circular canals) that detect movement and changes in the position of your head. If you were to close your eyes for a moment and tilt your head, you would know that your head is tilted even without having the visual input because your vestibular system provides that information. If a child's vestibular system doesn't develop or integrate normally, she may be hypersensitive to vestibular stimulation and have fearful reactions to ordinary childhood activities such as swinging on swings, going down slides, etc. She may also experience difficulty walking on or negotiating non-level surfaces such as hills or stairs. Children with this kind of hypersensitive vestibular system often appear clumsy, but not all clumsy children have hypersensitive vestibular systems, and not all children with vestibular dysfunction are hypersensitive. Some are under- or hyposensitive. Children with hyposensitive vestibular systems often engage in what appears to be sensation-seeking behaviours. They may whirl around, jump, and/or spin.

The Proprioceptive Sensory System

- The **proprioceptive** system provides feedback from your muscles, joints, and tendons that enables you to know your body's position in space. If there is a disturbance in the proprioceptive system, the child may be clumsy, fall, seem to maintain abnormal body postures, have difficulty manipulating small objects, and may resist trying different movements. If you've ever watched a student's grip on a writing instrument and noticed how abnormally tight the grip was, you may have been seeing an indication of this kind of problem (although there might be other explanations for the problem).

Some Signs of Sensory Dysregulation

- Overly sensitive to touch, movement, sights
- Inability to habituate to sounds and fear with unexpected noises
- Easily distracted
- Holding hands over ears in complex environment
- Avoids tastes, smells, or textures normally tolerated by children that age
- Activity level that is unusually high or unusually low
- Impulsive, lacking in self-control
- Inability to unwind or calm self
- Social and/or emotional problems
- Physical clumsiness or apparent carelessness
- Hesitation going up or down stairs
- Difficulty making transitions from one situation to another
- Holding on to walls, furniture, people, or objects, even in familiar settings
- Delays in speech, language, or motor skills
- Delays in academic achievement
- Seeks out movement activities, but poor endurance and tires quickly

Who is Affected by Sensory Dysregulation Issues?

- Sensory Processing Disorder
- ADHD
- Autism
- OCD
- Tourette's Syndrome
- Fragile X Syndrome

Remediating Sensory Dysregulation

- Refer to OT
- But OT takes time, and the sensory issues are having a significant impact on the child and those around him/her in the meantime
- Collaboration

Applied Behaviour Analysis

- Definition: The application of the principles of behaviour to issues that are socially important in order to produce practical change.
- Behaviour analysts target behaviours for change.
 - Identify behaviour
 - Identify the function of the behaviour
 - Identify appropriate alternatives
 - Teach the appropriate alternatives
 - Reinforce the appropriate alternatives

How Does ABA Work?



Example

John and his mother are at the shop. John wants a sweet.



John screams and cries and points to the sweet



John's mother gives him a sweet to keep him quiet

Example



Example

John and his mother are at the shop. John wants a sweet.



John says “can I have I sweet please mom?”



John’s mother gives him a sweet

ABA in Sensory Dysregulation

- Functions of behaviour
 - Automatic
 - Attention
 - Access to tangible
 - Escape
 - (Access to routine)
 - (Access to stereotypy)
- Once the function of the behaviour has been determined, a function-based intervention can be developed. Function-based interventions are the most effective interventions, because they acknowledge the needs of the individual, and teach the individual an appropriate means of getting his/her needs met.

Dealing with Sensory Dysregulation

- Sensory breaks
 - Type of sensory input
 - Length of breaks
 - Frequency of breaks
 - When to give breaks
 - Teach the child to ask

Dealing with Sensory Dysregulation

- Sensory items
 - Fiddle toy
 - Workspace modifications

Dealing with Sensory Dysregulation

Systematic Desensitization

- Hierarchy
- Reinforcement
- Can be a lengthy process, but is more tolerable for the individual and the family than flooding

Dealing with Sensory Dysregulation

Flooding

- Not the first resort, unless historically effective
- Can be very effective, and take less time to achieve the target result than with systematic desensitization

Dealing with Sensory Dysregulation

Environmental modification

- Often, simple changes can have a significant impact
- Changing the environment versus changing behaviour?

Dealing with Sensory Dysregulation

- Functional Communication Training
 - Cessation
 - Assistance
 - Tangible
- Reinforcement schedule

Dealing with Sensory Dysregulation

- Teaching replacement skills
 - Attention
 - Emotional Self-control
 - Self-awareness
 - Self-monitoring
 - Inhibition
 - Motor Skills
 - Flexibility
 - Motor Skills

Important Considerations

- Every individual is different – what may be distracting for one, may help another to focus
- Consistency in intervention
- Adaptability in intervention
- Setting realistic goals
- Dietary and medical referrals

Questions?