



## Sensory Processing

Sensory processing refers to the brain's ability to process information from the sensory systems. Many children with ASD experience sensory processing difficulties. If you have concerns regarding your child's sensory processing ability, please contact an occupational therapist.

Difficulties with sensory processing impairs one's ability to interpret the information they are receiving from the sensory receptors. When we think about sensory processing, we refer to the five common senses; hearing, sight, touch, taste, smell as well as the two body senses; the vestibular and proprioceptive systems. Sensory processing difficulties may be evident in the child's behaviour; they may have difficulty maintaining attention to task, responding to instructions, or display sensory seeking or sensory avoidance behaviours.

For most of us, effective sensory processing occurs automatically and unconsciously. We take in sensory information through our senses (e.g. sight, sound, smell, touch and taste), and turn these sensations into appropriate motor, behavioural and emotional responses.

### Sensory Processing Difficulties

Children with sensory processing experience unique and unusual responses to everyday sensory stimulation. The sensory signals that these children receive through their senses may be inaccurate and inconsistent. This can cause the child to feel overwhelmed or unable to respond appropriately to the sensation.

There are two broad categories of sensory processing difficulties; *over* sensitive and *under* sensitive.

The 'over sensitive' child registers sensory information at a lower level that would be typically expected. *For example, a child that is over sensitive to auditory stimuli may be distracted or overwhelmed by sounds that others do not notice such as water running through pipes or cars going past outside.*

The 'under sensitive' child requires a higher level of sensory input for it to register than that which is typically expected. *For example a child that is 'under sensitive' to vestibular stimuli may be able to spin on a merry-go-round for longer than would be typically expected without any negative consequence such as nausea as they don't register the spinning sensation to the degree that is typically expected.*

These two broad categories are then broken down again to identify children that then either 'seek out' the sensory stimuli that they are having difficulty processing or actively 'avoid' or are easily 'overwhelmed' to those stimuli.



## **The Senses**

There are seven senses in our body that provide us with feedback about what is happening in our environment and also inside our body.

**Proprioception** is the ability to understand where your body is in space. The receptors for this system are located in the muscles and joints of the body. *For example; a child who experiences difficulty with the processing of proprioceptive information may have a decreased perception of pain, or seek movement excessively and appear to always be 'on the go'.*

The **vestibular** system is located in the inner ear and is responsible for our balance, understanding of motion, and spatial awareness. *For example; a child who experiences vestibular processing issues may become distressed when their feet leave the ground, alternatively, they may crave vestibular input and spin or rock excessively.*

**Olfactory** processing is the ability to perceive, interpret, and respond to smell (olfactory) information. *For example; a child presenting with an olfactory processing issue may smell objects excessively, alternatively, they may be over sensitive to smell information and actively avoid it.*

**Gustatory** processing is the ability to perceive, interpret, and respond to taste (gustatory) information. *For example; a child that has difficulty processing taste information may have a self-limited diet, alternatively, they may crave strong flavours excessively such as spicy or sour.*

**Tactile** processing is the ability to receive, interpret, and respond to touch (tactile) information. *For example; a child that has difficulty processing tactile information may not tolerate the feel of certain fabrics on their skin, alternatively, they may not notice touch in the way they would be expected.*

**Auditory** processing is the ability to perceive, interpret and respond to sound (auditory) stimuli. *For example; a child who experiences difficulty processing auditory stimuli may be respond negatively to noise that you would not typically expect a negative response to such as a vacuum cleaner, alternatively, a child may be unaware of auditory stimuli and may not respond when their name is called.*

**Visual** processing is the ability to perceive, interpret, and respond to visual stimuli. *For example; a child who has difficulty processing visual information may be easily distracted by visual stimuli within their environment or become focused on a certain part of an object such as watching the wheels of a toy truck spin.*

**If you feel that your child may be experiencing difficulty with their sensory processing, please seek the advice of an occupational therapist.**

For more information on sensory processing, the following book may be a helpful resource:  
*Winnie Dunn: Living sensationally, understanding your senses*

**\*\* These examples are based on typical developmental milestones, but it is important to remember that all children will develop in different ways and at different speeds. Please use this information as a guide only, and always discuss your concerns with a qualified professional who will help guide you in finding the best support for your child.**