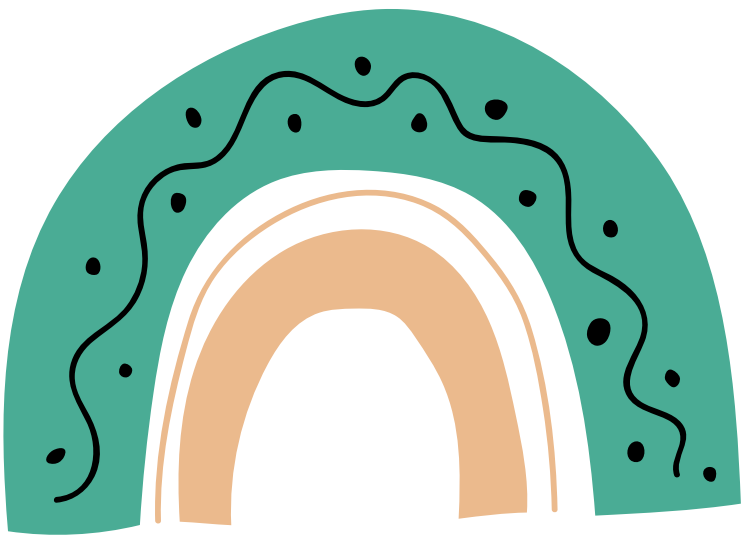




**M E G H A N**  
**B U T L E R**  
Occupational Therapist



## 2022 – SENSORY WHAT?

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Sensory systems & integration?

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Problems with Sensory integration

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The bucket analogy

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What can OT do for you?

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A little terminology

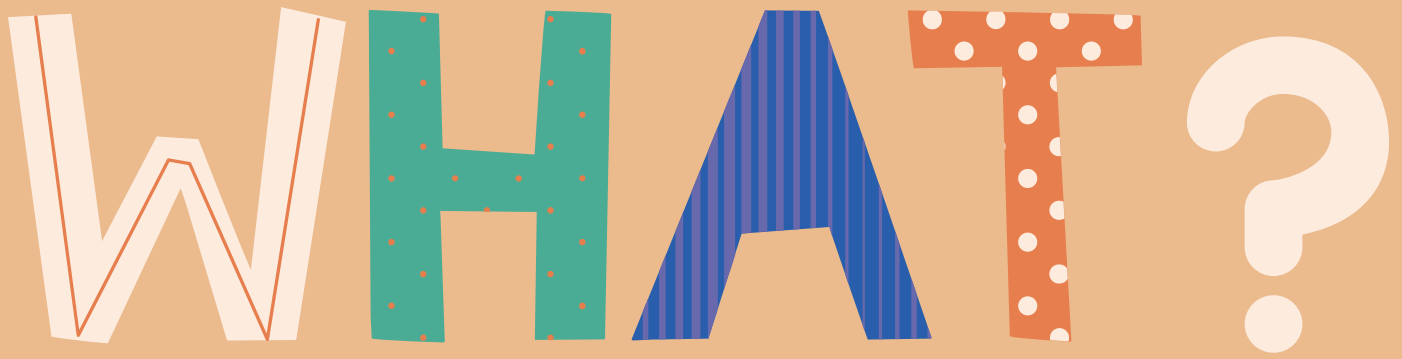
## SENSORY – IT'S SYSTEMS AND INTEGRATION

As far back as ancient times, sensory systems have been divided into five modalities: hearing, smell, taste, touch, and vision. Others have been recognized to within the somato-visceral category that previously included touch (mechanoreception) and, more recently, position and movement (proprioception), heat and cold (thermoreception), and pain (nociception). Big words right?

It is from these that the term Sensory Integration (SI) was born, which is a word commonly used when talking occupational therapy. The term Sensory Integration describes the brain's ability to collect input from the senses, arrange and organize it, and respond to it.

When we talk sensory, there are three main sensory systems (among others) in every human body: THE TACTILE SYSTEM (our ability to touch something and understand it), THE VESTIBULAR SYSTEM (that involves the inner ear, movement, eye-hand coordination and balance) and THE PROPRIOCEPTIVE SYSTEM (the system that determines our body's position in the world around us).

Our senses lay a critical foundations for development and they have an impact on almost everything (from gross and fine motor development, speech and language production, to social and emotional maturity, and behaviour and even learning).



## OH OH! PROBLEMS with SI ???

So what happens if the sensory system goes wrong and insufficient integration of information from the outside world occurs and how do these behaviours present?

Problems with sensory integration can occur in many ways. To explain this in layman's terms, I am going to use the example of a big/tiny bucket (the sensory system) that is suppose to get filled to the brink with water (sensory activities/input) before a little one can focus, make sense of the world and are ready to learn.

### BIG BUCKETS – sensory seekers

Some kids have big buckets (the brain has a very high threshold/need for specific sensations), which then drives them to seek out those specific sensations in a high intensity manner in order to get their bucket filled up. The sensations that they seek to fill their buckets fall within the different sensation categories of movement, touch, pressure or then noise/tastes or smells.

A kid with a big bucket (high threshold) in the movement category may be constantly on the go (moving, fidgeting, wiggling, rocking, climbing and hanging upside down). A little one with a big bucket in the touch department can be found touching everything and everyone, never notice their face/hands being dirty and seldom gets cold/hot. A big bucket in the proprioceptive region results in pushing, bumping, falling, jumping, crashing and impulsive behaviour resulting in bumps and bruises (also as this system is often low registering and not aware of surroundings). I think you get the picture of the Big Bucket population that we often refer to as SENSORY SEEKERS.

### TINY BUCKETS – sensory avoiders

The other end of the scale involves little ones with TINY BUCKETS (which means that their need for stimulation/threshold is low and reached fast). These kids can only tolerate small amounts of water (stimulation from the outside world) to fill their tiny buckets, which means that too much can quickly make their buckets overflow or even have them tip over (which then presents in fight or flight kind of behaviour or even a sensory tantrum in the store).

If you would like some examples - a kid with a tiny bucket (low threshold) in the movement category may avoid climbing onto swings, afraid of heights, get car sick fast and they typically do not enjoy their feet leaving the ground. A little one with a tiny bucket in the touch department can be found avoiding touching textures, have difficulty with clothing labels, they dislike wearing socks with tags and are often fussy eaters. Again, I think you get the picture of the Tiny Bucket population - which are often referred to as SENSORY AVOIDERS/SENSITIVE/DEFENSIVE KIDS



What can OT  
do for you



## So what does an OT do – What is this Sensory Integration Therapy that everyone is going on about??

An OT starts with an assessment that reveals a little one's sensory strengths and challenges. As noted above, a little one may have either sensory seeking or sensory defensive (sensitive) behaviours, or both.

Once this is identified, an individualized treatment plan is created and implemented through play (which is a child's daily job/occupation). Therapy aids a little one in learning how to fill their bucket just right so that they are able to focus and so that they feel ready to engage with the outside world and interact with their environments (and ultimately find joy and well-being in themselves and daily life).

Since therapy with a little one is play-based, it may look like fun and games. However, the process is very interactive and often complex, with the therapist constantly adapting activities, presenting new challenges, and integrating these activities with the set goals in mind. Through the process of therapy, a little one is set up with skills to self-regulate (in case a bucket overflows or is not full enough yet). They develop skills like postural control (so they can sit in their chair for the time required), praxis and sequencing (needed whenever strategy is required), eye/hand coordination, fine motor skill development, social and emotional development, and academic learning.

In OT your little one will play games, engage in movement activities (which may include swings, trampoline, balance boards, and more), "messy" play and many other sorts of sensory activities that are structured to engage them at their own sensory level. Kids that participate in Occupational Therapy enjoy "playing" in their sessions while we set right what has gone haywire and improve their overall quality of life.

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**A parent/teacher spends a great deal of a little one's life with them! YOU are thus a crucial link to kids getting the help they need– never underestimate the power of this!**



# Terminology??

## Tactile System

The tactile system refers to our sense of touch. Tactile doesn't just refer to our hands! The main way we perceive this input is through our skin, which has many receptors all over our bodies for all different kinds of sensations. The tactile system helps us understand important sensations such as pressure, texture, hot/cold and pain.

## Vestibular System

The vestibular system is a sensory system that is responsible for providing our brain with information about motion, head position, and spatial orientation; it also is involved with motor functions that allow us to keep our balance, stabilize our head and body during movement, and maintain posture. Thus, the vestibular system is essential for normal movement and equilibrium.

## Proprioceptive System

Proprioception is the awareness of how our muscles are moving. It is essential to help the brain to know where the body and limbs are in space. It helps us to know how hard or soft we are pulling or pushing



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