

# SENSORY PROCESSING AND THE SENSES

Sensory processing is how our body and brain take in information from the world around (and inside) us. Our senses help us understand where we are, what's happening, and whether we're safe. The brain uses this information to guide our behaviour, decisions, and emotions.

Our brain also uses modulation to filter out sensory information when it isn't important, like the feeling of our socks or the hum of the fridge. Our senses help us decide what is safe and what might be a threat. A perceived threat can create the same physical reactions as a real one.

Some children experience sensory information differently. They may:

- Take in sensory information differently than others.
- Have trouble filtering or organizing sensory information.
- Be overly sensitive or under-sensitive to certain sensations.
- Struggle to understand what their body is telling them (e.g., hunger, pain, needing the bathroom).
- Have difficulty managing how much sensory input they can handle at once.

## The 5 Common Senses

- Seeing (visual). Vision helps us identify and interpret shapes, colours, symbols, body language, and more. Visual cues guide our movements, support social interactions, and help us determine feelings of safety or danger.
- Hearing (auditory). Hearing allows us to identify the quality and direction of sounds, alerting us to possible danger. For example, without looking, we can tell that a person is talking, who that person is, who they are speaking to, and how far away they are.
- Touching (tactile). Touch provides information about the shape, size, and texture of objects. It helps us understand our environment and guides fine motor skills like buttoning or writing. Safe, positive touch can also calm the nervous system.
- Tasting (gustatory) and smelling (olfactory). Taste and smell work together to help us enjoy food and to determine what is safe to eat (or not). Smells can also trigger memories and create internal sensations that influence emotions. Smell also provides information cues about potential danger in our environment.

## The Lesser-Known Senses

- Proprioception. Awareness of where our body parts are and how they relate to one another. Proprioception helps us identify our body's position and movement without relying on sight. For example, it allows us to lift a spoon to our mouths without spilling.
- Vestibular. Our sense of gravity, balance, movement, and direction. It helps us understand which way we are moving, how fast, and whether we are steady or off-balance. The vestibular sense works closely with proprioception to keep us safe and comfortable in movement and across environments. Vestibular input comes from the inner ear.
- Interoception. Our sense of what is happening inside our body. Interoception gathers signals from our organs to tell us if we are hungry, thirsty, tired, need the bathroom, are too hot or too cold, or in pain. It is also closely linked to emotions as we receive the physical sensations that are associated with emotions, in turn giving us an "internal sense" of how we feel. Interoception is the only sense that is focused on our internal world.

# SENSORY PROCESSING AND THE SENSES

## Sensory Processing Challenges

- Challenges with coordination, stability, and muscle tone.
- Difficulties in behaviour and emotional regulation.
- Trouble with planning, initiating, and sequencing movements.
- Difficulty sustaining attention to a task.
- Over or under responding to sensations.
- Craving intense (big) sensory experiences.
- Difficulty interpreting peer interactions, conversation, and play.
- Trouble adjusting the force of movements.
- Challenges understanding internal cues of interoception (e.g., continuing to eat after being full, not recognizing hunger or thirst).

## Supporting Children's Sensory Processing

- Provide a calm space where children can go with you when they are overwhelmed.
- Use movement breaks (e.g., stretching, jumping, carrying a slightly heavy backpack).
- Try movement breaks with cross-body work (e.g., follow the leader, repetitive actions).
- Model calm breathing (e.g., blowing out candles, smelling flowers).
- Adjust sensory input (e.g., reduce noise, dim lights, provide headphones).
- Have predictable routines and keep transitions clear to reduce anxiety.
- Offer fidgets or tools (e.g., stress balls, chewable necklaces).
- Help the child notice what sensations come up with certain emotions and where they feel them in their body.

# SENSORY PROCESSING AND THE SENSES

## Need More Support?

### Local Resources:

- Family Physicians, Pediatricians, or Nurse Practitioners
- Public Health Nurse
- Supported Child Development
- Counsellors (e.g., Child & Youth Mental Health)
- Art Therapists

### TED Talk:

- [Your Sensory Health Matters](#)

### Resources Available at the WKCCRR Library:

- The Sensory Integration Book by Christy and Rebecca Isbell
- Sensory Processing 101 by Dayna Abraham, Claire Heffron, Pamela Braley, and Lauren Dronjak
- Sensory Beads
- Sensory Exploration Kit

### Online Resources:

- [AIDE Canada - Sensory Processing Differences Toolkit](#)
- [Sensory Processing Disorder Video](#)
- [Autism Occupational Therapy Toolkit - AIDE Canada](#)
- [AIDE Canada - Sensory Motor Strategies](#)