

Sensory Processing

Sensory processing refers to how the brain takes in, organises and responds to information from our senses. It helps us understand what is happening inside our bodies, make sense of our surroundings, stay safe and focus on what is important so we can participate, learn and engage in daily life.

Everyone experiences and processes sensory input in their own unique way, with individual preferences and sensitivities. These differences affect what we notice, how we feel, and how we respond to everyday situations.

For example, imagine you accidentally touch a hot pan. Pain receptors in your skin detect the high temperature and sends signals to your brain. Your brain quickly processes this input, recognises it as harmful, and triggers a protective response – such as quickly pulling your hand away.

For some children, the brain processes sensory information – such as sights, sounds, touch, or movement – in different ways. This means they might be more or less sensitive to certain sensations, or have difficulty filtering or organising sensory input. These differences can make it harder for them to focus, learn or engage in daily activities.

Why is sensory processing important in early childhood?

- **It shapes how children learn** – proper sensory integration allows children to explore their environment, build motor skills, & engage in hands-on learning.
- **It supports brain development** – rich, appropriate sensory input strengthens neural connections critical for attention, memory, language & problem-solving.
- **It regulates emotions and behaviour** – a child's ability to stay calm, focus, and interact appropriately depends on how well their sensory system is regulated
- **It affects motor development** – sensory input guides movement and coordination (e.g., balance, posture, hand-eye coordination)
- **It builds social and daily living skills** – sensory processing influences how children tolerate textures (clothes, food), sounds (voices, music), and touch (hugs, hand-holding).



The 8 sensory systems:

- **Visual** (sight) – how we interpret what we see
- **Hearing** (auditory) – how we detect and interpret sounds
- **Touch** (tactile) – how we feel things through our skin (pressure, temperature, texture, pain)
- **Oral** (gustatory) – how we sense flavour, temperature and texture
- **Smell** (olfactory) – how we detect and respond to odours
- **Movement** (vestibular) – balance and movement, spatial orientation and coordination
- **Body position** (proprioception) – body awareness & sensing where your body parts are without looking
- **Interoception** – internal body signals like hunger, thirst or needing to go to the toilet.

The 4 sensory profiles:

- **Sensory Seeking** – These individuals crave sensory input and will seek out sensory input to meet their needs. Sometimes the need for sensory input can interfere with participation in other tasks. They may like loud noises, physical play, or seek movement to help them complete a task.
- **Sensory Avoiding** – Sensory avoiding individuals only need a small amount of sensory input and may actively try to reduce sensory input. They may cover their ears at loud noises, resist certain clothing textures, or avoid messy play.
- **Sensory Sensitive** – Notices sensory input quickly and feels it intensely, but doesn't always avoid it. They may be easily distracted, or have strong preferences for routine or clothing.
- **Low registration** – May miss or be under responsive to sensory input. They may seem tired or disengaged, miss cues like their name being called or need extra encouragement to participate.



Sensory profiles can vary

Children don't always fit neatly into one sensory profile. We can have a combination of all four profiles, and our sensory preferences can vary depending on the sense, situation or environment.

For example, a child might be sensory seeking for movement, enjoying jumping, running or spinning, while being sensory sensitive or avoiding when it comes to sound, covering their ears or becoming distressed by loud noises. They might also love messy play but avoid certain clothing textures.

Sensory needs can change depending on how we are feeling, how tired we are and what is happening around us. Rather than looking for one "sensory type", try to notice what your child is seeking, avoiding, missing or responding strongly to. This can help you understand what they need to feel comfortable, regulated and ready to participate.