

Understanding the Sensory Landscape

If you close your eyes and think back to your time in grade school, the sounds flashing through your mind are likely those of lockers slamming, fellow students chatting in the hallways, and the squeaking of sneakers on the floor as people storm the halls between classes. Odds are that one thing you *don't* imagine is the distinctive sound of a jacket scraping along the surface of a brick wall in a crowded hallway.

It's not that this sound is particularly rare; in fact, in an elementary school setting, it's probably rather common. The reason you don't immediately associate it with school life is that it's a sound that blends into the background. Whether they're in the middle of hearing it or not, the typical student probably doesn't give much thought or attention to a sound like that. Their mind is on other things, such as yesterday's science lecture or tomorrow's class presentation.

However, to someone with sensory hypersensitivity, the sound of a jacket scraping against a brick wall could be the most unsettling and horrendous sound imaginable. The sound of nails on a chalkboard is one that just about anyone in the world finds borderline excruciating, but to certain people, even "ordinary" sounds that go unnoticed by many can carry that same feeling of severe discomfort and pain.

There are four patterns of sensory processing: ***low registration***, ***sensation seeking***, ***sensory sensitivity***, and ***sensation avoiding*** (Dunn, 2007). Sensory sensitivities can noticeably impact a person's quality of life since our senses are tied to almost everything we do. Put simply, a sensory sensitivity is a lowered (hyposensitivity) or heightened (hypersensitivity) awareness of a specific sensation. A hyposensitivity presents when too little sensory information is perceived by an individual and too little stimulation is transmitted to the brain. Meanwhile, hypersensitivity is present when too much sensory information is perceived and too much stimulation is transmitted to the brain.

You can likely name the five senses: sight, smell, sound, taste, and touch. However, did you know humans actually have as many as 33 distinct senses? (Twenty-One Senses, 2021). The field of occupational therapy addresses eight total senses that impact us in our daily lives:

- **Visual** (sight)
- **Olfactory** (smell)
- **Auditory** (sound)
- **Gustatory** (taste)
- **Tactile** (touch)
- **Vestibular** (spatial orientation and balance)
- **Proprioception** (external body awareness)
- **Interoception** (internal body awareness)

The lesser-known senses – *vestibular*, *proprioception*, and *interoception* – are just as important to consider as the core five senses that we often hear about. The *vestibular* system, located in our inner ear, is responsible for balance, postural control, muscle tone, spatial awareness, alertness, and eye movement. Most individuals who are sensory seekers of this sense or have a vestibular “hyposensitivity” may feel the need to constantly be in motion, while a person who has a vestibular sensory hypersensitivity or avoiding pattern might live a more sedentary lifestyle and even experience motion sickness or headaches after a lot of movement.

Proprioception gives us our sense of body awareness. It allows our muscles, joints, and tendons to give information about the body in relation to the surrounding space, such as how fast the body is moving and in which direction it is going. While a person who “seeks” input from these senses might prefer giving and receiving deep-pressure hugs and constantly being in motion, a person who is hypersensitive to proprioception may instead avoid hugs altogether and feel disoriented after overactive movements like spinning, jumping, or running.

Lastly, *interoception* is one of the most overlooked senses, yet one of the most important. Interoception is the body’s ability to interpret internal cues such as thirst, hunger, pain, and fatigue. Individuals who struggle with interoceptive processing may be unable to accurately translate the intensity of those cues, which leads to them failing to eat when they’re hungry, put on a jacket when they’re cold, or go to sleep when they’re tired.

Having a good understanding of all of the senses and recognizing that individuals may experience sensory inputs differently is critical when interpreting reactions or behaviors in certain situations. Oftentimes, the kid who is labeled a picky eater is sensitive to taste or texture, the person people may assume is clumsy bumping into others in line may be seeking proprioceptive input, and the concertgoer covering their ears, which others interpret as rude, could have an auditory sensitivity. A person with sensitivity to proprioception may be misunderstood as lazy, while they actually experience a great deal of discomfort from motion. **These labels are often easy to reach for and still easier to apply to others, but it is important to recognize that the underlying cause behind behaviors like these could in fact be a sensory sensitivity.**

Activities such as playing in gritty textures like sand, dry rice, or birdseed may help to overcome some tactile defensiveness. A simple accessory like noise-canceling headphones might significantly improve the experience of a person with an auditory sensitivity. Understanding an individual’s sensory profile can help to determine which activities to avoid, which ones to engage in, and what accommodations can be made to improve a person’s life.

If you would like to learn more about how any of the eight senses impact your life or are wondering how you can learn more about your unique sensory profile, you can consult with an occupational therapist (OT). An occupational therapist can provide sensory assessments to help individuals better understand their sensory needs. OTs may also introduce a sensory diet, a tailored plan of activities and accommodations designed to meet a person’s sensory needs, or present individuals with sensory integration challenges to help them respond differently to stimulation from each of the senses. Addressing sensory needs ultimately helps individuals to regulate their sensory input, feel safer and more comfortable, and engage in activities of daily living.