

# What Is Interoception and How Does It Impact Those With Autism?

## INTEROCEPTION: THE EIGHTH SENSORY SYSTEM

by Kelley Mahler

Sit back and close your eyes. What do you *feel* inside your body?

- Is your heart beating fast or slow?
- Are you breathing deeply or shallowly?
- Do you have to go to the bathroom?
- Are your muscles tense or loose?
- How does your stomach feel?

Most of us are able to *feel* all of these sensations with the help of our little-known, but very important, eighth sensory system, Interoception.

## How does the interoceptive system work?

There are little receptors located throughout the inside of our body, in our organs, muscles, skin, bones and so forth. These receptors gather information from the inside of our body and send it to brain. The brain helps to make sense of these messages and enables us to feel things such as hunger, fullness, itch, pain, body temperature, nausea, need for the bathroom, tickle, physical exertion and sexual arousal. Additionally, interoception allows us to feel our emotions.

## How is interoception connected to our emotions?

Typically, each emotion feels differently in the body. For example, before speaking in public, your body may *feel* a certain way: the heart may race, the muscles may feel tense and shaky, the breathing may become shallow, and the stomach may feel fluttery. These sensations let us know that we are feeling a bit nervous. Without clearly feeling these sensations, it is difficult to identify emotions with a high degree of clarity.

## How does interoception influence self-regulation?

When the interoceptive system is properly working, the sensations alert us that our internal balance is off and motivates us to take action, to do something that will restore the balance and help us feel more comfortable. For example, if we feel thirsty – we get a drink; if we feel full – we stop eating; if we feel cold – we get a sweater; if we feel the need to urinate – we go to the bathroom; if we feel anxious – we seek comfort; if we feel frustrated—we seek help. Interoception underlies our urge for action. If we *feel* that our internal balance is off, we are motivated to act, to seek immediate relief from the discomfort caused by the imbalance.

## Is interoception important to any other areas?

In addition to self-regulation, interoception is clearly linked to many other important skill areas including:

- Self Awareness
- Problem Solving
- Intuition
- Flexibility of Thought
- Social Understanding
- Perspective Taking

The research showing just how important interoception is to many aspects of life is unequivocal. The brand-new book *Interoception: The Eighth Sensory System Practical Solutions for Improving Self-Regulation, Self-Awareness and Social Understanding of Individuals With Autism Spectrum and Related Disorders* (Mahler, 2016, [aapcpublishing.net](http://aapcpublishing.net)) delivers an overview of this research and describes the clear link between Interoception and these important skill areas.

## What do we know about Interoception and Autism?

As with other sensory systems, the interoceptive system can be impacted in individuals with autism. To date, only two research studies have examined the interoceptive experience of individuals with autism\*. Both have found the participants with autism to have significantly lower awareness of their interoceptive signals. Although a great deal more research is needed in order to have a full understanding, these two studies confirm the numerous personal experiences reported by individuals with autism.

For example, Chloe Rothschild, a 22-year old with autism reports:

*'I did not realize I had trouble feeling my internal body signals, as I had never heard of interoception before November 2014, but when I did, everything started to make sense. That is, difficulties with interoception help to clarify why I have such a hard time pinpointing my symptoms when I am not feeling well, why sometimes I seem to eat snack after snack without feeling full and why I get upset/anxious/overwhelmed so quickly, because I don't feel it until I'm already far into the storm of the discomfort and frustration.'*

Hollis, an 18-year old with autism reports:

*'I went and got a plate of food thinking that I was hungry. I wasn't hungry. I was bored. My body was not giving me clear signals, so I did not know what I was feeling. There have been many instances of this growing up. After learning about interoception, I started working on feeling my heart beat. I would lie in bed every night with my hand on my heart. It took about six months for me to feel my heart beat consistently. Interoception has been an important concept for my personal development as a teen with HF-ASD. Being able to receive clear internal signals has allowed me to be more successful in all areas of my life.'*

## What can be done to improve interoception?

The good news is that interoception can be improved. Mahler provides an entire chapter filled with practical and easy-to-use strategies that target the development of Interoceptive Awareness (which is the ability to both notice & give meaning to internal sensations). Also included is an entire chapter dedicated to the assessment of Interoceptive Awareness.

Could interoception be a missing link in the field of autism? The evidence suggests so. [Interoception: The Eighth Sensory System](http://aapcpublishing.net) provides a thorough opener to this important conversation.

\*Fiene, L., & Brownlow, C. (2015). Investigating interoception and body awareness in adults with and without autism spectrum disorder. *Autism Research*. Doi:10.1002/aur.1486

Garfinkel, S.N., Tiley, C., O'Keeffe, S., Harrison, N.A., Seth, A.K., & Critchley, H.D. (2016). Discrepancies between dimensions of interoception in autism: implications for emotion and anxiety. *Biological psychology*, 114, 117-126.

