

What is Interoception?

It is one of our 8 Sensory Systems:

Sight, hearing, smell, taste, touch, vestibular (balance), proprioception (where our body is in space and how much force is needed for tasks), and interoception.

Interoception- It allows us to “feel” our internal organs and skin, and is generally responsible for helping us perceive what is going on inside the body. Involves sensations such as:

• pain	• sinking	• trembling
• body temperature	• lifting	• muscle tension
• itch	• butterflies in the stomach	• pleasant touch
• hunger	• heart rate	• sleepiness
• thirst	• breathing rates	• when we need to use the bathroom
• sexual arousal	• steadiness	• etc.
• calm		

The Insula: Interoception seems to be controlled by an area of the mid-brain called the insular cortex, or insula. The insula is responsible for translating the incoming signals from the body organs, skin, etc., into a message that we understand consciously as **FEELINGS**.

These “feelings” can be either:

- 1) a **body state**, such as hunger or itch, or
- 2) an **emotional state**, such as overwhelm or delight.

Eg. Before speaking in front of a large group of people, we may feel our heartbeat increase, our muscles tense, our stomach flutter, and an overall shakiness in the body. We know automatically that we are nervous. **In fact, without the body signals, we would not have felt the emotion!**

Eg. squinty eyes + tense muscles + fast heart beat + hot skin = furious

So what does Interoception do for us?

I. Emotional Awareness: Interoception enables us to translate physical sensations into emotions and body states. Research correlates high emotional awareness with adaptability, emotional control, ability to empathize, effective coping skills, and high self-esteem.

II. Self-Regulation: Interoception leads us to ACTION—and thus to successful SELF-REGULATION. For example, if we are unable to identify that we are getting mad, we are unable to take steps to calm ourselves before it becomes too big to control.

*Information summarized from: Mahler, Kelly. (2016). *Interoception--The Eighth Sensory System: Practical Solutions for Improving Self-Regulation, Self-Awareness, and Social Understanding in Individuals with Autism Spectrum and Related Disorders*. Lenexa, KS: AAPC Publishing.

III. Intuitive Decision-making: (vs cognitive decision-making)

The brain uses “**Somatic Markers**” to allow it to increase efficiency. When we encounter an object, person, place or experience, our brain places a “marker” on the particular interoceptive (somatic) feeling we experience in that moment (i.e., do we feel safe? nervous? happy?), and later retrieves it when we have a similar experience. Over time, our brain can make an almost instantaneous “educated guess” about how we should respond to a new situation. This allows us to go about our days making speedy, intuitive, essentially “thought-free” decisions. **Eg.,** Where should I sit? Whom should I avoid? How should I behave in this context? What is likely to happen next? When this system is not working, individuals must consciously consider all aspects of a situation in the moment, which is both difficult to do, and exhausting.

IV. Prioritizing Sensory Input: The insula and a nearby part of the brain are involved in the “**Salience Network**” which helps the brain to select and prioritize the most relevant sensory information from the massive amount of information coming in (i.e., should I attend to the teacher or the sound of the air conditioner?)

V. Self-Awareness: Interoception supports our basic sense of self: *this is me, this is my body, this is how I feel.* It helps us to reflect on ourselves, which allows us to better assess our own behavior in relation to the world and to others around us. Without it, it is much more challenging to behave in socially “expected” ways that could ease interactions with others.

VI. Perspective-Taking: The ability to infer emotions in others is correlated directly to our ability to feel our own emotions—which in turn depends on interoception. The insula has been shown in studies to be involved both in experiencing our own emotions as well as when we are making inferences about the emotions/experience of others.

Impairments of the Interoceptive system can lead to:

- misinterpretation of sensory stimuli
- difficulty addressing physical needs (i.e., forgetting to eat, etc)
- rigid or inflexible thinking
- difficulty adapting to change and new environments
- difficulty with problem-solving and decision-making
- attention issues
- mismatched energy levels
- emotional dysregulation (i.e, outbursts, shutdowns, meltdowns)
- low emotional awareness
- difficulty with perspective-taking/empathy
- difficulty understanding unspoken social rules (“the hidden curriculum”)

So what to do when your interoceptive system is “glitchy?”

Interoceptive Awareness can be practiced and strengthened over time!

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