

Session 05  
Interoception: Attunement  
December 1, 2025

**BOTTOM-UP**  
**EXECUTIVE FUNCTIONING**

# Interoception

# What is Interoception?

- Charles Sherrington: 1932 Nobel Prize in Physiology or Medicine for discovering foundations of the nervous system, including the discovery of the synapse and the reflex
- Exteroception (sensing from the outside: 5 senses of sight, sound, taste, touch, and smell)
- Proprioception (sensing from muscles and joints)
- Interoception (sensing from the internal organs: heart, lungs, stomach, etc.)

# Expanded concept of Interoception

- Sensing of everything “inside”
- Internal organs: heart rate, breathing, hunger, tiredness, bathroom needs (alexisomia)
- Emotions (alexithymia)
- Trauma
- Reactions to the outside world
- Internal processing of the outside world

# Measuring Interoception (examples)

- Gastric interoceptive accuracy
  - Drink water until satiation and until maximum fullness (calculate ratio)
- Cardiac interoceptive accuracy
  - Count their heartbeats without taking a pulse
  - Decide whether external rhythm is in sync or not in sync with their heartbeats
- Respiratory interoceptive accuracy
  - Decide if there are changes in breathing difficulty based on adding filters that obstruct breathing
- Questionnaires about self-awareness

# Studies on interoception in autistic and/or ADHD persons

- ◉ 50% of autistic people report alexithymia (Kinnaird et al, 2019)
- ◉ Alexisomia in 74% of autistics (Fiene et al, 2018)
- ◉ Decrease in autism, AuDHD children (Yang et al, 2022)
- ◉ Decrease in ADHD adults (Göz Tebrizcik et al, 2025)
- ◉ Decrease in sensory processing and interoception in traumatized kids vs autistic/adhd kids vs controls-- traumatized kids were in between autistic/adhd-ers and controls (Ide-Okochi et al, 2024)
- ◉ Meta-analysis found no clear indication of decrease. Inconclusive because everyone measured things differently. (Klein et al, 2025)
- ◉ Interoception did not predict burnout in autistic college students, but lower interoceptive trust did. (Lach, 2025)

# Attunement

# What is attunement?

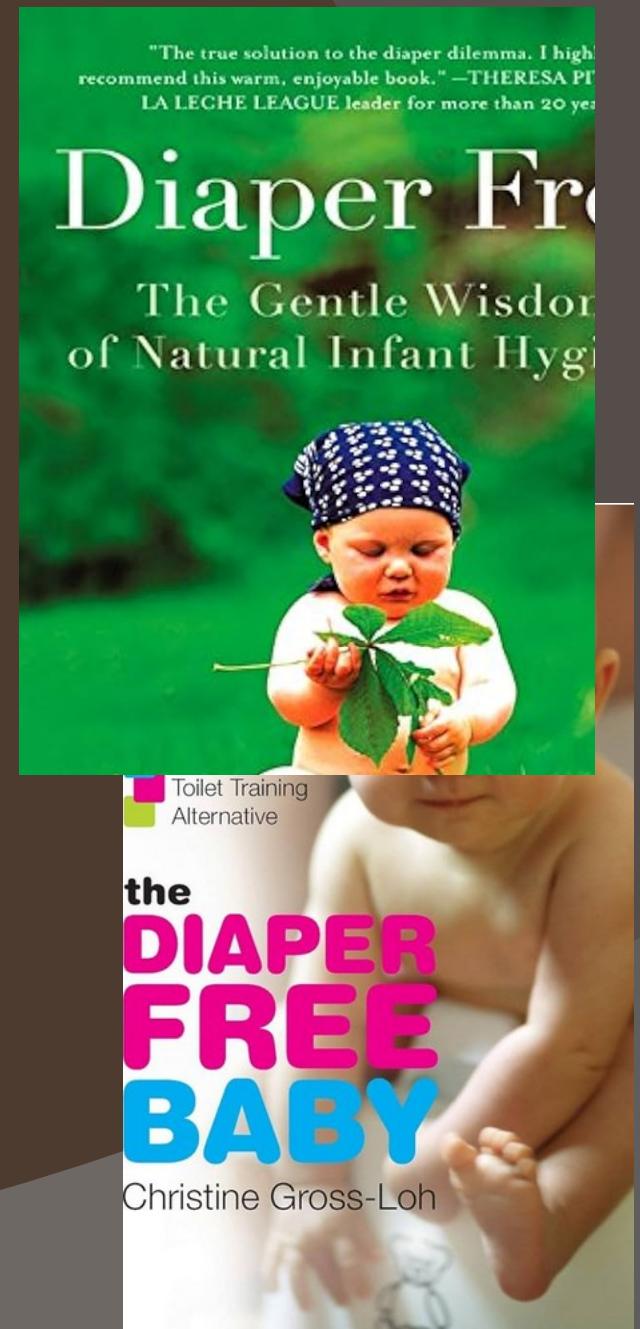
- Habit of awareness without needing words
- Discussion

# Attunement is a useful skill I value most in therapy

- It helps meet your own needs (physical, emotional, spiritual, social, vocational...).
- You can't meet your needs unless you know what they are.
- Attunement helps you organize changing needs, prioritize competing needs.
- If you can learn to be attuned to yourself, you start to learn attunement with other people: your kids, your partner, etc.
- Traumatized people can have exceptional attunement to others around them first.
- Couples counseling is learning to be attuned to each other.
- Parenting skills is learning to be attuned to your children.

# Example: Going Diaper Free

- “Elimination Communication” was coined by author Ingrid Bauer (2001)
- Before diapers were invented and for most of the world which cannot afford diapers, parents paid attention to when babies needed to go, and then helped them go in the right place.
- Babies communicate, just without words.
  - Pay attention to subtle cues
  - Act on those cues
  - Teach baby to notice those cues
- Not toilet training. Listening.
- Practicing attunement with the baby



# Listening, paying attention



Obvious cues:  
The Pee Dance

(Alltop, 2016)



Subtle cues:  
The poop face  
Squirmry  
Getting fussy  
Getting quiet  
Passing gas

(McAmis, 2023)

Listen, then act.  
Provide the opportunity  
to meet their needs.



(Baby photo credits: McAmis, 2023)

# Learning wordless communication

- Diaper free is the default for pets.
- You have to learn attunement to your pet.
- Learn to interpret your pet's way of communicating without words
- Your body doesn't use words, like pets and babies

# Attunement to the baby / pet

- Stop being busy
- Pay attention to the baby / pet
- Notice baby / pet is doing something (e.g. squirming)
- Discern the behavior (e.g. squirming) is significant
- Trust your reading of the significance
- Identify what need the baby / pet has
- Respond to the baby's / pet's need
- Provide opportunity for the baby's /pet's need to be met

# For traumatized people

## Attunement to the boss

- Stop being busy
- Pay attention to the boss
- Notice the boss is doing something (e.g. looking tense)
- Discern the behavior (e.g. looking tense) is significant
- Trust your reading of the significance
- Identify what need the boss has
- Respond to the boss' need
- Provide opportunity for the boss' need to be met

# Attunement to yourself

- Stop being busy
- Pay attention to your body / emotions / sensations
- Notice you are doing something (e.g. fidgety, frustrated)
- Discern the behavior (e.g. fidgety, frustrated) is significant
- Trust your reading of the significance
- Identify what need you have
- Respond to your need
- Provide opportunity for your need to be met

# Attunement

- Get the data
  - Stop
  - Pay attention
  - Notice
- Interpret the data
  - Discern
  - Trust (opposite of dismissing it as “nothing.”)
  - Identify need
- Act on the data
  - Respond (opposite of ignoring it, even if it is “something”)
  - Provide opportunity

# Get the data

## Stop

- ◉ Usually this is triggered by noticing unusual behavior.  
Example: “I snapped at my friend 3 times today.”
- ◉ Attunement is a necessity, but also not affordable for everyone. The most expensive part of attunement is “stop being busy.”
- ◉ Discussion

# Get the data

## Pay attention / Ask the question

- Hard for people who have learned to ignore or avoid the signals.
- Sometimes, it doesn't feel safe to pay attention. Go to safety first. It's ok to not be ready for interoception / attunement.
- Body scan: where am I feeling anything?
- What am I feeling there? (Hunger? Pain?)
- On a scale of 0-10, how much am I feeling it?  
(How hungry am I? How badly do I need to pee?)
- Discussion

## Get the data

## Notice / Get the answer

- ◉ Example: I notice I haven't eaten for the last 10 hours. I haven't gone to the bathroom either. I am a 9.3-hungry, an 8-tired, and a 9-need to pee.
- ◉ Discussion

# Get the data

## Notice / Get the answer: Scales

Mankoski Pain Scale		
<i>A Numeric Pain Intensity Scale</i>		
0	No Pain.	No medication needed.
1	Very minor annoyance - occasional minor twinges.	No medication needed.
2	Minor annoyance - occasional strong twinges.	No medication needed.
3	Annoying enough to be distracting	Mild painkillers are effective. (Aspirin, Ibuprofen, Tylenol)
4	Can be ignored if you are really involved in your work, but still distracting.	Mild painkillers relieve pain for 3-4 hours.
5	Can't be ignored for more than 30 minutes.	Mild painkillers reduce pain for 3-4 hours.
6	Can't be ignored for any length of time, but you can still go to work and participate in social activities.	Stronger painkillers (Codeine, Vicodin) reduce pain for 3-4 hours.
7	Makes it difficult to concentrate, interferes with sleep. You can still function with effort.	Stronger painkillers are only partially effective. Strongest painkillers relieve pain (Oxycontin, Morphine)
8	Physical activity severely limited. You can read and converse with effort. Nausea and dizziness set in as factors of pain.	Stronger painkillers are minimally effective. Strongest painkillers reduce pain for 3-4 hours.
9	Unable to speak. Crying out or moaning uncontrollably near delirium.	Strongest painkillers are only partially effective.
10	Unconscious. Pain makes you pass out.	Strongest painkillers are only partially effective.

Developed by Andrea Mankoski in 1995

Andrea Mankoski was a chronic pain patient who made this scale to communicate with family members and care providers. (PainScale, n.d.)

It may be useful to create your own scales that are meaningful to you: pain, hunger, thirst, peeing, tiredness, rate of perceived exertion (how hard something is), energy levels, executive capacity (spoons / hearts), etc.

Get the data

Notice / Get the answer: Scales

- Discussion

# Interpret the data

## Discern significance: Compare

- Discern whether your observations are significant. Is this data a random glitch or within normal range for you?
- Is that baby squirming or was that a random twitch? Am I really hungry? Was that a road bump noise or is there something wrong with my tires?
- Example: I'm super hungry, tired, and need to pee badly. Is this normal for me or is there a need for me to meet?
- This may be the hardest part of attunement, because unmet needs is “normal.”
- If you have wobbly tires, you may not pay attention to the noise because that is just normal.
- Set normal to where you want optimal functioning to be.
- Discussion

# Interpret the data Discern significance

- Discussion

# Interpret the data

## Trust the significance

- Trusting is the opposite of dismissing.
- Interoceptive trust says, “I’m going to investigate this further.”
- At some point, you have to say “I’m going to err on the side of caution.”
- Lack of trusting your data can lead to no action, can lead to burnout. That’s how you drive on flat tires and chew up your rims.
- If you trust, and it turned out to be nothing, you communicated to yourself, you are worth the extra time to be careful.
- Discussion

# Interpret the data

## Identify the need

- ◉ Example: I snapped at my friend. I notice I am also 9.3-hungry. I need to eat so I won't be hangry.
- ◉ Example: Puppy is fidgeting at the door. He needs to pee.
- ◉ Discussion

## Act on the data

### Respond / Decide to act

- Responding is the opposite of ignoring.
- Example: I'm going to eat.
- Example: You can decide to respond in the future. I was too late today for the puppy, but I will put a pee pad next to the door.
- Discussion

# Act on the data

## Provide the opportunity

- Create the environment for your needs to be met.
- Example: Go to a restaurant where you have access to food.
- Example: Put the pee pad near the door. Set things up so it is easier for you to respond to the puppy.
- Discussion

# In which areas is attunement difficult?

- Discussion

# How would attunement change your life?

- Discussion

# How can you improve trust (not telling yourself it is nothing) in your interoception?

- Discussion

# How can you improve trust (not telling yourself it's nothing) in your interoception?

- Discussion

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