




I Can't Listen to You Because My Shirt is Too Itchy:  
Sensory Needs of Gifted Learners

Matthew J. Zakreski, PsyD



Welcome!

- 
- Who am I?
  - What are our goals tonight?
    - Overview on sensory processing / disorder (SPD)
    - Examples of neurodivergent brains (ADHD, Autism, Gifted/2e, SLD)
    - Classroom adaptations
  - Slides
  - Questions



## Exercise

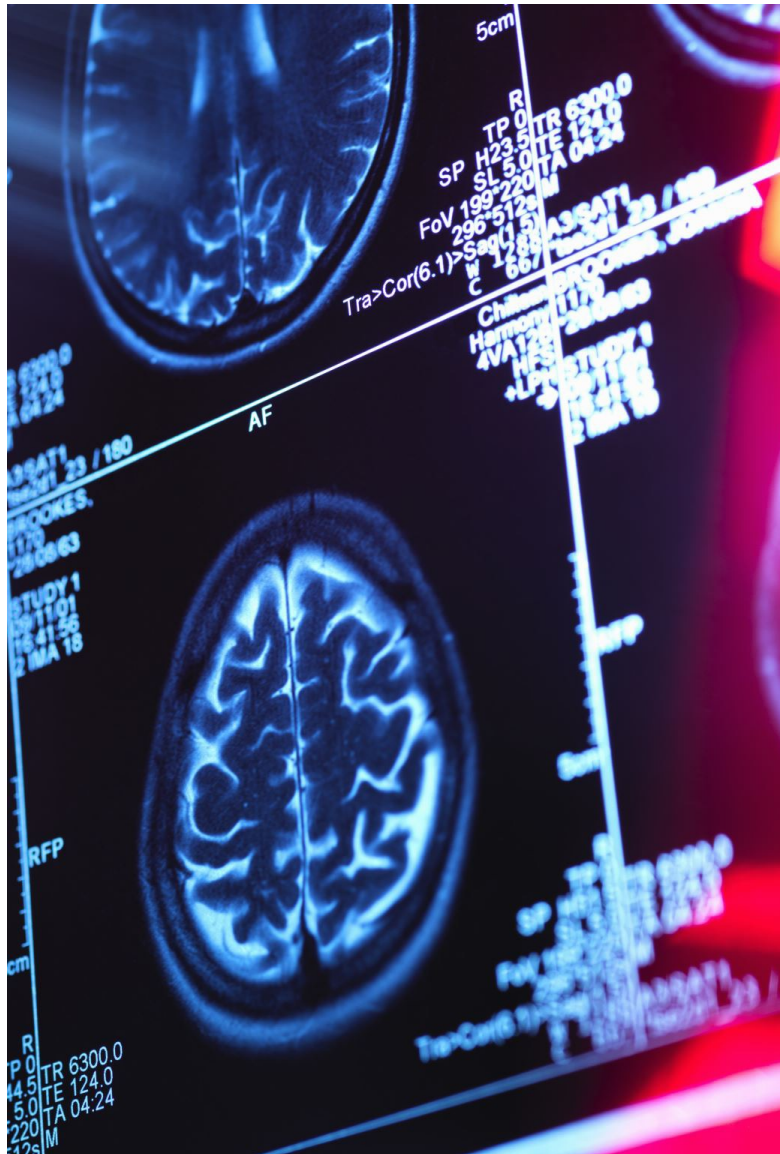


# Sensory Areas

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- Sight
- Hearing
- Taste
- Tactile/Touch
- Smell
- Proprioception – body location
- Vestibular – smooth movement
- Thermoception – temperature
- Equilibrioception – balance





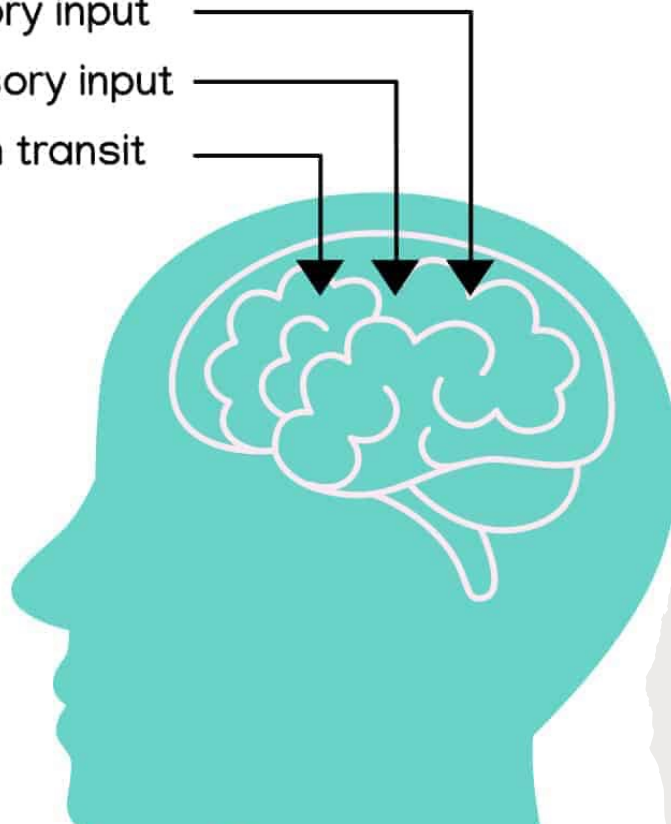
# Sensory Processing

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- "the neurological process that organizes sensation from one's own body and from the environment and makes it possible to use the body effectively within the environment"
  - Anna Jean Ayres (1972)
- Our brain is constantly taking in sensory information – what happens?
- Disorder - a condition where multisensory integration is not adequately processed in order to provide appropriate responses to the demands of the environment

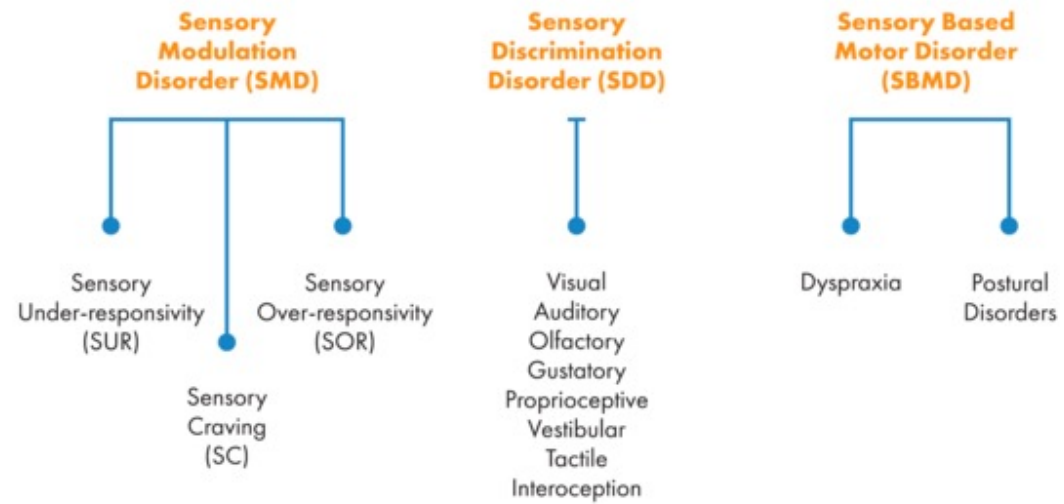
# SENSORY ISSUES ARE A RESULT OF...

- Overprocessing sensory input
- Underprocessing sensory input
- Sensory input is lost in transit  
(low registration)



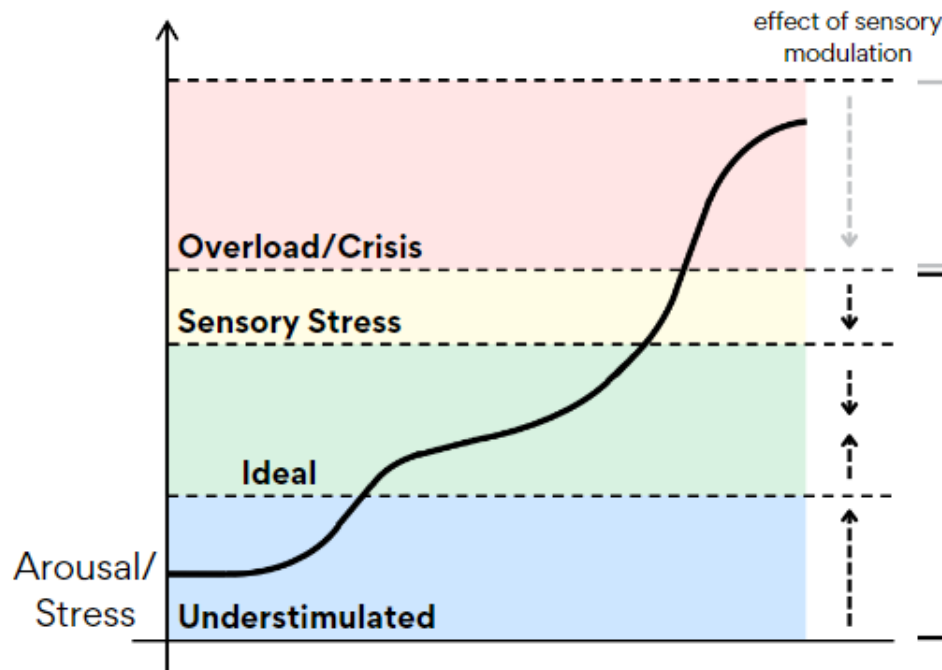
Where do the  
Problems  
Happen?

# SENSORY PROCESSING DISORDER



# What Is Sensory Overload?

Individuals with sensory needs are more susceptible to becoming **overwhelmed** and entering a **crisis** state



Once in overload or crisis, sensory modulation is much less effective

Sensory modulation allows patients to maintain ideal sensory stimulation and successfully self-regulate

This is why the best approach is to **prevent sensory crisis** through sensory-informed care, rather than focus on managing sensory crises using more extreme and potentially traumatic measures (restraining, sedation, etc.)

adapted from:

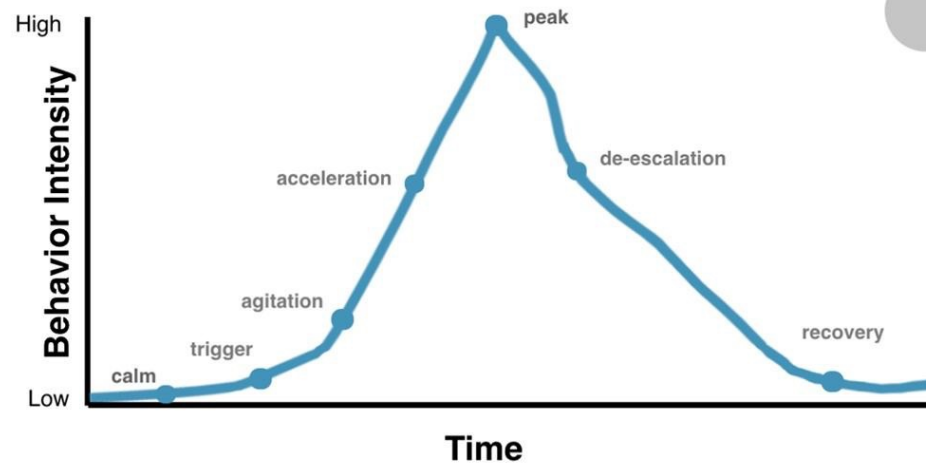
Adams-Leask 2018, *Australasian Psychiatry*  
Champagne 2011, *Sensory Modulation and Environment*





Wait a second...

## The Escalation Cycle



# To and From

## SENSORY SEEKING VS. SENSORY SENSITIVE

I could bounce on a trampoline & spin in circles on the tire swing all day long

I like to smell things

I love having my hair brushed or played with

I love to play with the lights and turn them on and off

I enjoy making lots of noise – the louder the better

I don't notice if my clothing is disheveled or not on right

Tackle me, roll on the floor with me, give me bear hugs

I love taking risks, jumping from high up and crashing into things



I am scared of trampolines, monkey bars or to swing high

I dislike having my hair brushed

I hate certain food textures so I'm a picky eater

I close my eyes in bright lights

I cover my ears to loud noise

I'm very sensitive to smells

I don't like being tickled

I'm really cautious with every step I take

I take out the tags in my clothes and there's some fabrics I won't wear

I won't wear

Don't touch me

I hate being barefoot



# Masking and Passing



# Sensory Processing Disorder

Children with SPD can demonstrate any one or more of the following signs:

- Overly sensitive or under responsive to touch, movement, sights or sounds
- Unusually high or low activity level
- Unusual clumsiness or apparent carelessness
- Poor fine motor and perceptual skills
- Delays in motor skill development
- Difficulty learning new motor tasks
- Low muscle tone or strength
- Difficulty with transitions or changes in routines
- Increased distractibility or limited attention
- Poor ability to regulate behavior or calm self down
- Impulsivity or lack of self control
- Poor self concept or body awareness
- Social and/or emotional problems
- Difficulty with speech, language skills or social skills
- Specific learning difficulties or delays in academic achievement



Parker's journey with SPD



# Sensory Therapy

Sensory integration therapy is driven by four main principles:

- Just right challenge (the child must be able to successfully meet the challenges that are presented through playful activities)
- Adaptive response (the child adapts his behavior with new and useful strategies in response to the challenges presented)
- Active engagement (the child will want to participate because the activities are fun)
- Child directed (the child's preferences are used to initiate therapeutic experiences within the session)

# Examples



**THE FORK**



**ORDER A PIZZA**

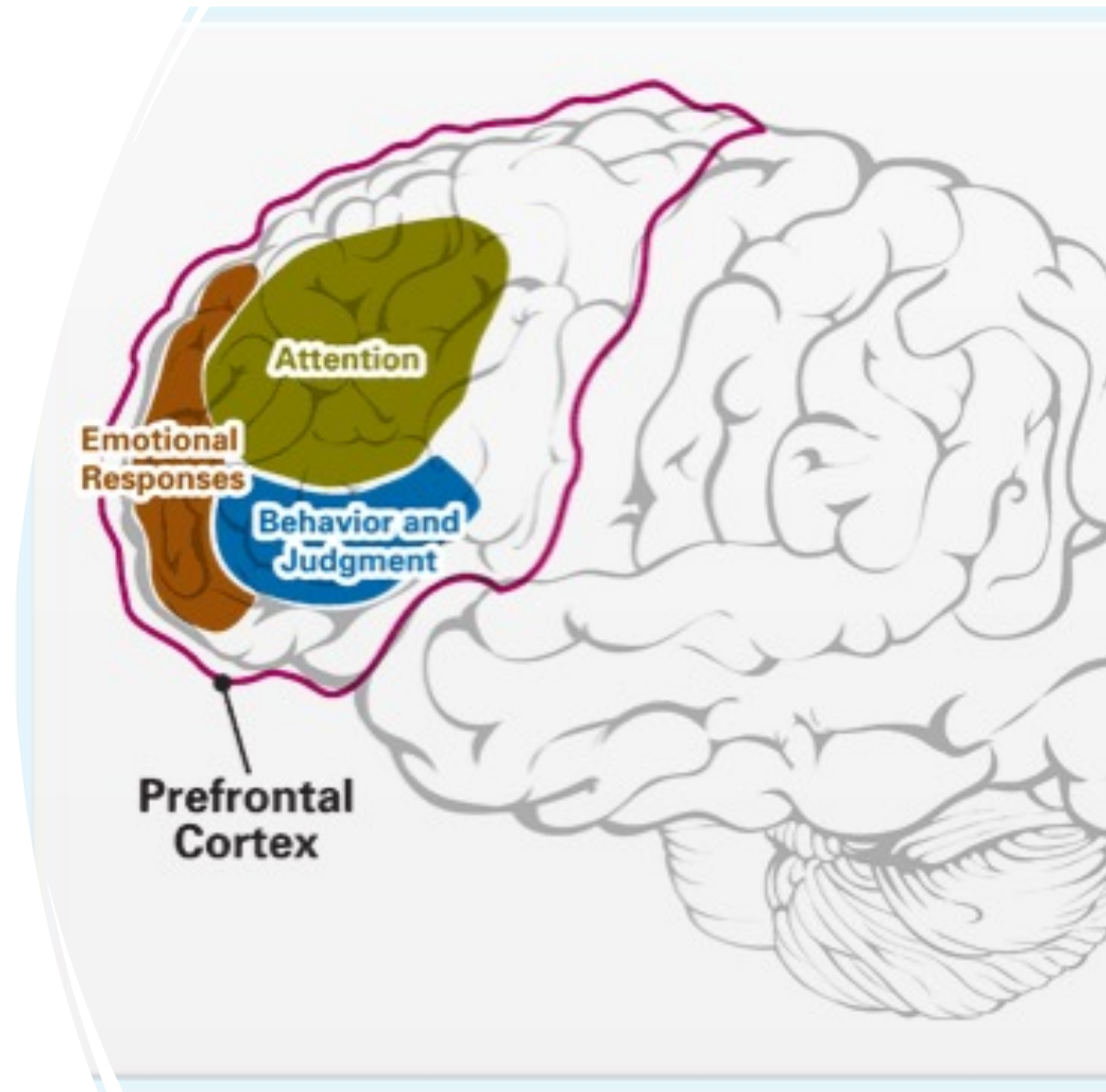
# Giftedness is a distinct neurological profile

- Efficient brains (better pruning of neurons)
  - Much larger corpus callosum
- Poor self-regulation and organization skills (overwhelmed pre-frontal cortex)
- Emotional intensity (larger amygdala)
- Reactive in social situations (hypothalamus / limbic system)
- Perfectionism (overactive basal ganglia)
- Creativity (supramarginal gyrus / right parietal lobe interconnectivity)
- Thickness of cortex changes



# Prefrontal Cortex (PFC)

- Located in the Frontal Lobe
- Executive Functioning Skills
  - Planning
  - Follow through
  - Task initiation/completion
  - Self-regulation (emotional)
  - Time management
  - Attention
- Behavioral Inhibition

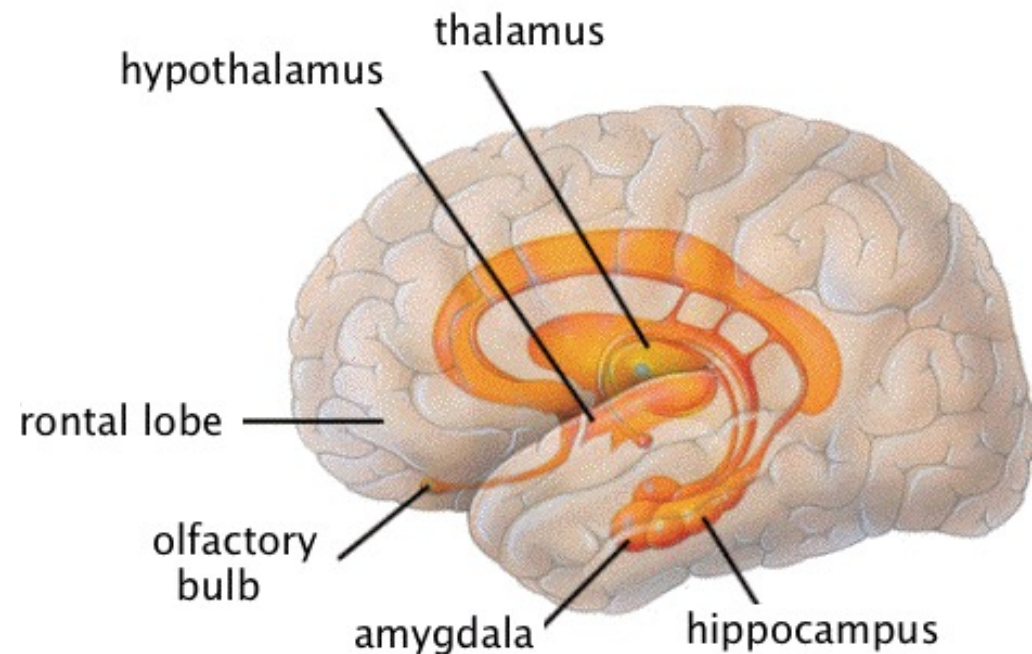


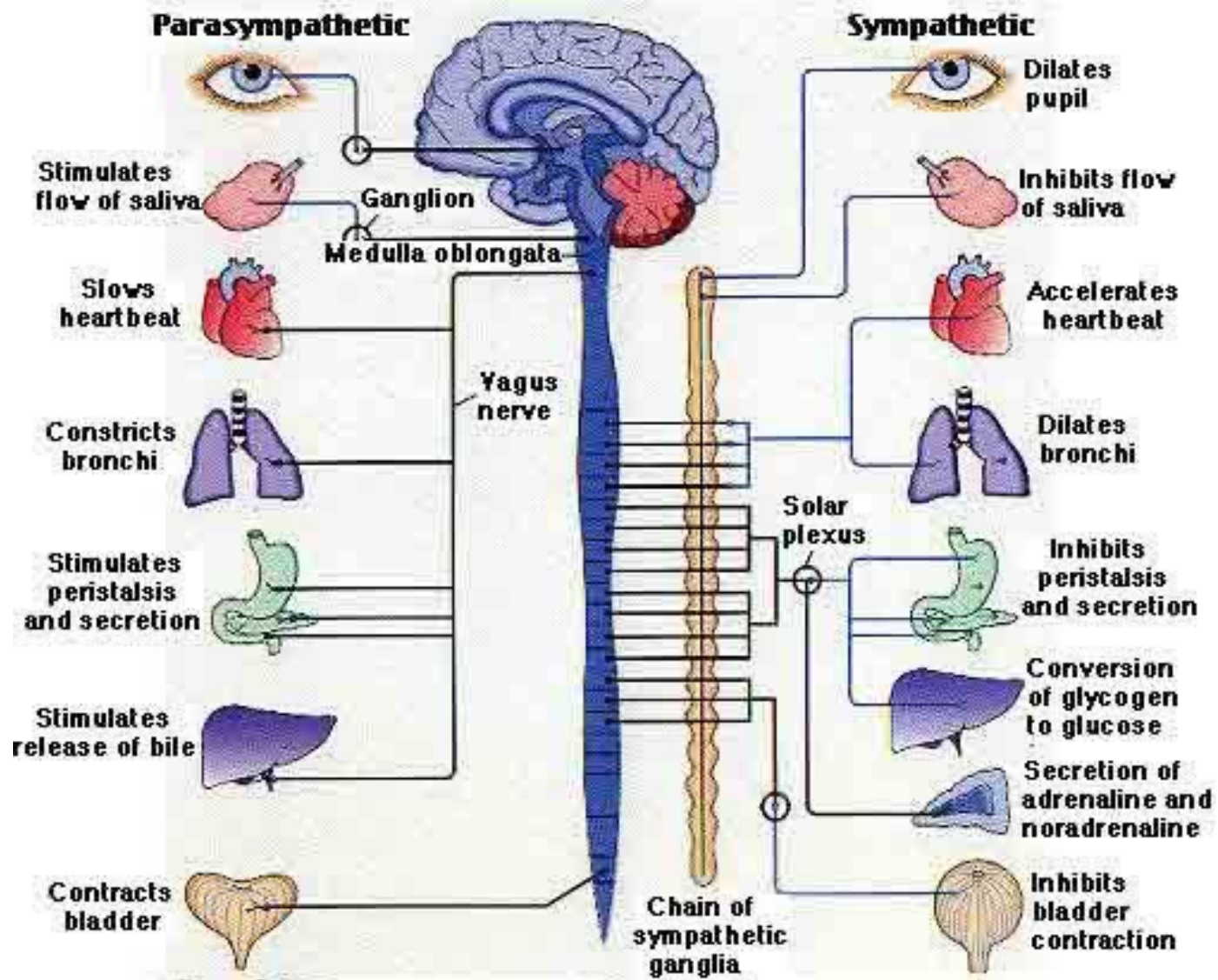




# Limbic System

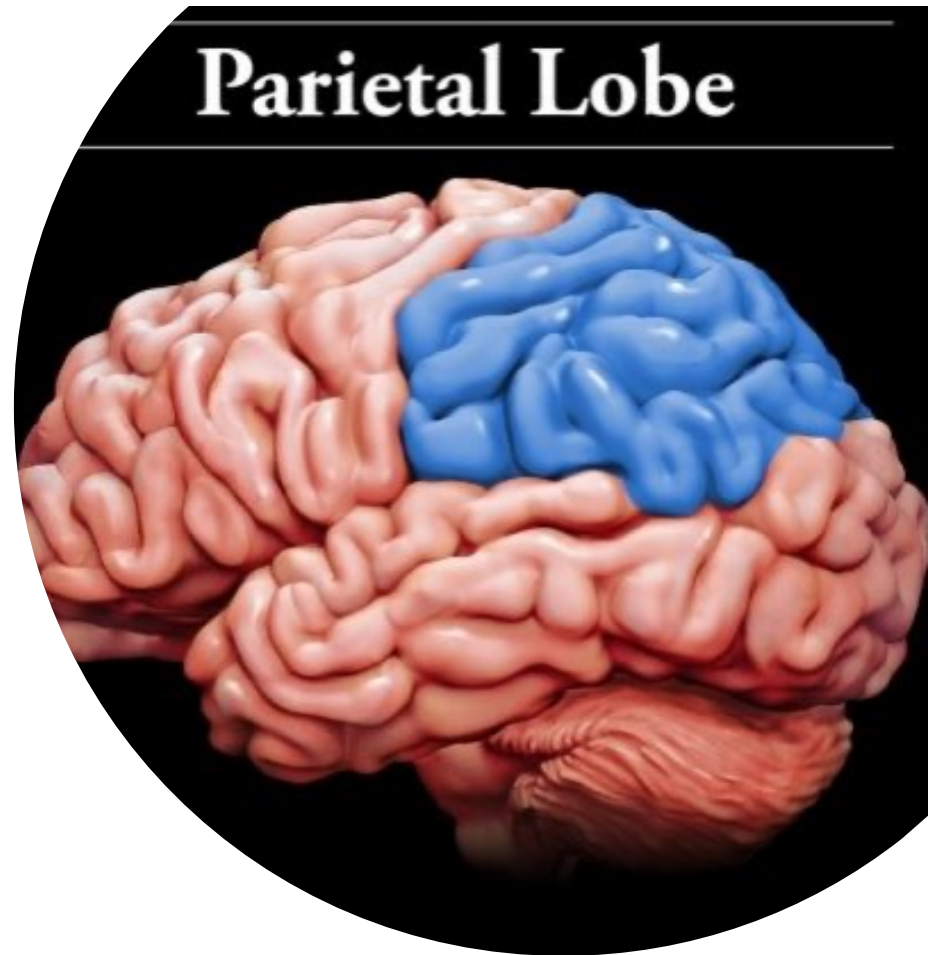
- Responsible for regulating emotion
- A system of related brain structures working together
  - Thalamus – relay center for information; pain
  - Hypothalamus - homeostasis
  - Hippocampus - memory
  - Amygdala – emotional response
  - Basal Ganglia – reward and repetition
- Why is the olfactory bulb included?
- Connections

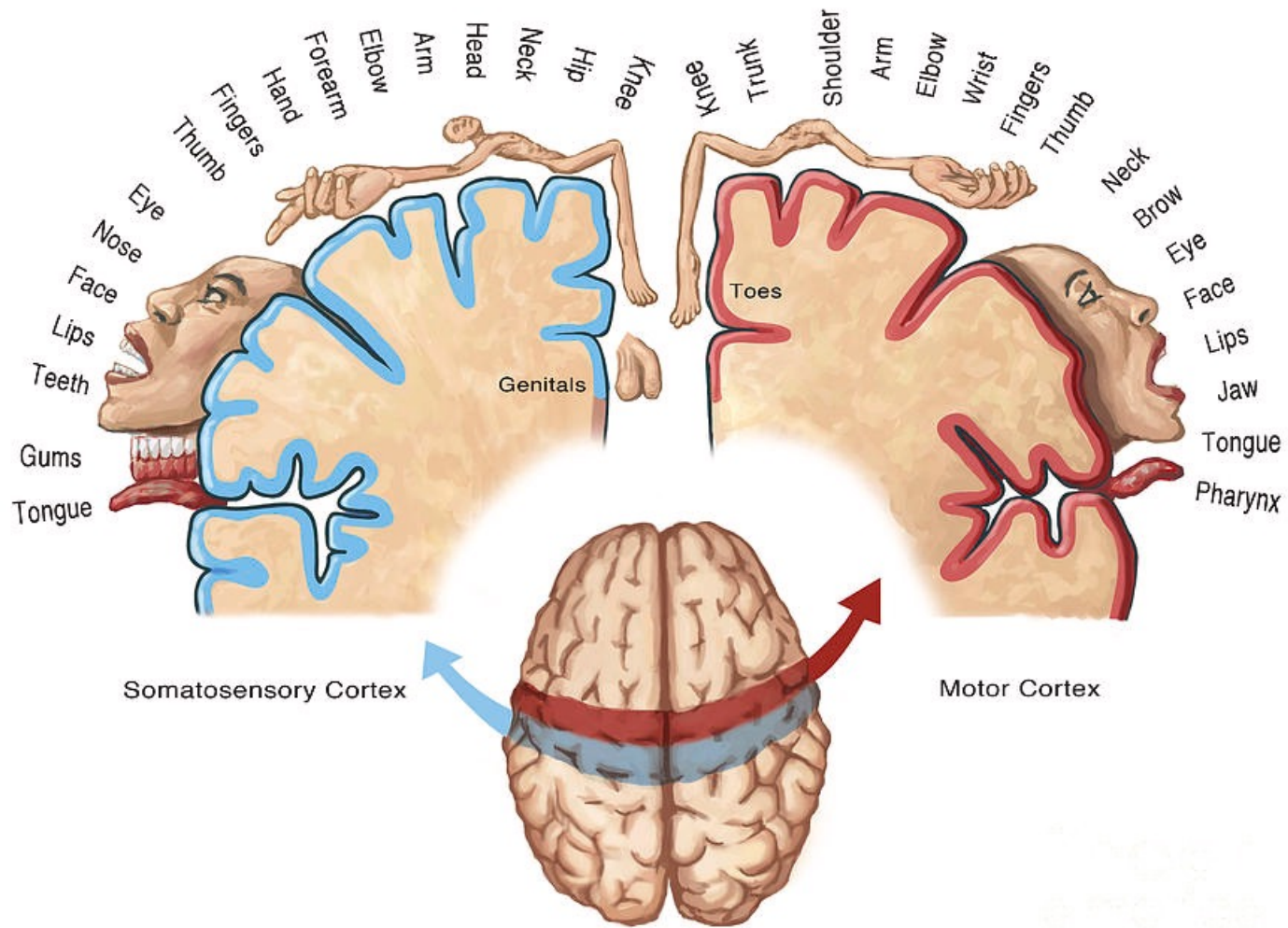




## Parietal Lobe

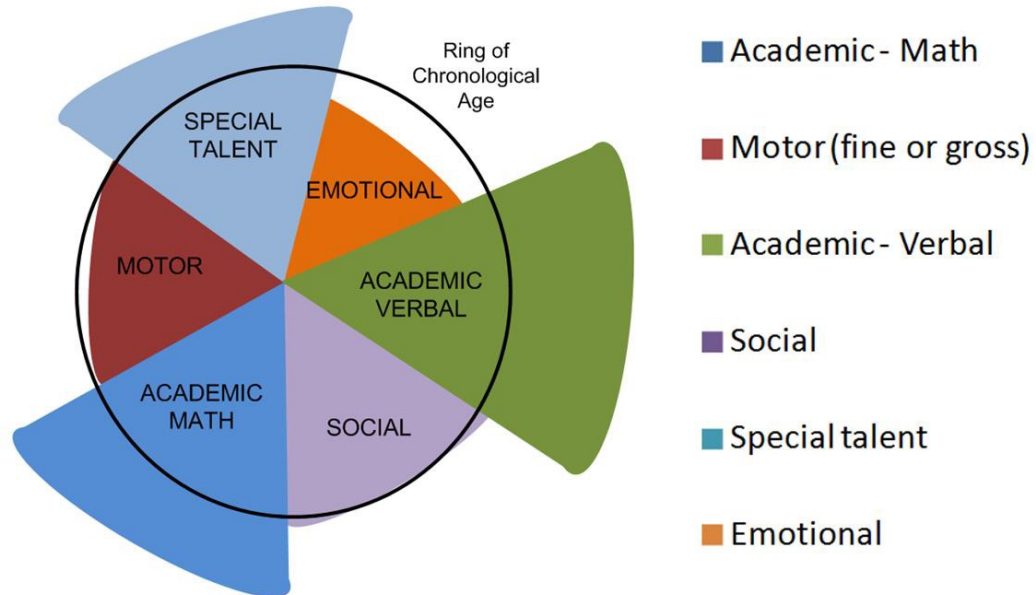
- Integrates sensory information across brain
- Spatial sense and navigation – proprioception
  - Homunculus – “little man”
- Mechanoreception – major sensory inputs from skin (touch, pain, temperature, location)
- Language processing (Wernicke’s area)
  - Apraxia
  - Dyslexia
  - Dyscalculia
  - Agnosia





# *Asynchronous* Development

## Areas of Development



© by Stephanie Newitt



## Motor Skills

- Psychomotor Skills often develop differently in neurodivergent kids
- Think about the skills that are most valued by peers, especially in school
- Struggles with processing vestibular and proprioceptive stimuli can appear as:
  - gross and fine motor problems
  - awkwardness in running
  - poor posture and core body strength
  - difficulties with fine motor (handwriting)

# Sensory Overexcitability

- Heightened experience or sensory pleasure or displeasure from sensory input (smell, taste, touch, etc.)
- Easily overwhelmed and distracted by sensory input
- May dramatically seek out or avoid being the center of attention
- What to do
  - What areas are overstimulating?
  - What sensory inputs give pleasure?
  - Start with clothes and food
  - Watch out for bathrooms!!!







# Supporting Sensory Needs at School

Flexible seating – including the ability to walk around the room

Chair bands

Fidget toys – 504 plan

“Bored bags” – a bag full of preferred options that a kid can use during down time (i.e., sudoku, rubix cube, book)

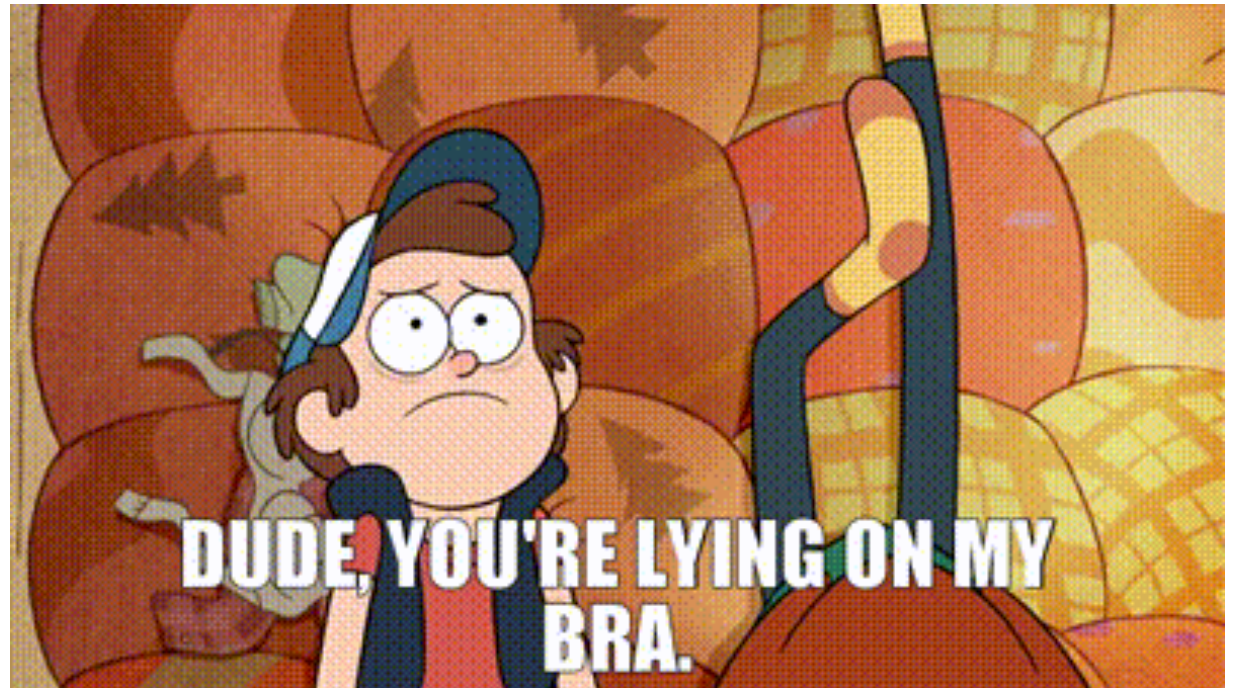
A preferred sensory space to access if needed

Adapted schedule/plans for sensory challenge classes: lunch, art, music, gym

Fire drills (!!!!)

Smartphone?

Case  
Example



# Supporting Sensory Needs at Home

Foods – preferred vs. not preferred; when to challenge and when to accommodate (make your own)

What are the preferred sensory experiences/items?

Noise-cancelling headphones

“Go bag” – emergency clothes, snacks, activities

Lighting, temperature, background noise – how unique?

Setting expectations for visitors

Laundry day – what do we need to be successful here?

How/when/how much to clean?

# Supporting Sensory Needs in the Community

Sensory issues don't end when you go outside – set expectations

5-minute check-in before you leave – plans, expectations, timeframe

Bring your tools/resources with you – bag, backpack, etc.

Think about bathrooms!

Just because it works for other kids...

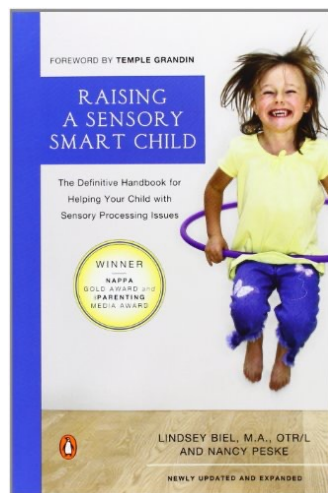
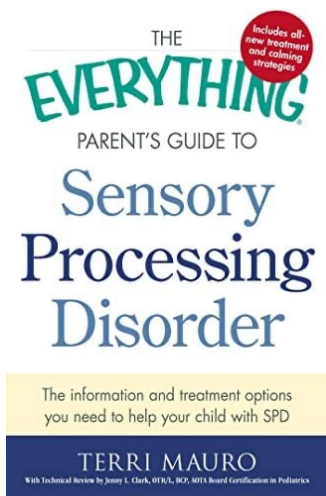
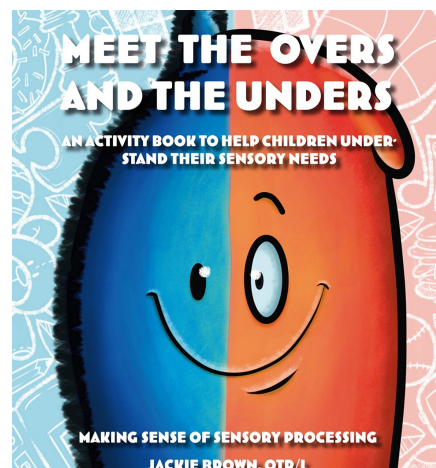
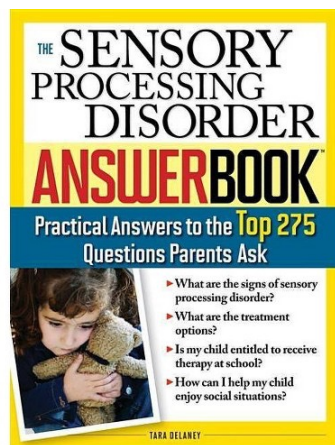
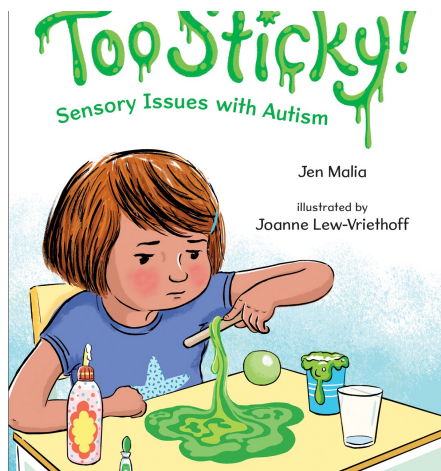
It is better to leave early than too late

Smaller and shorter events can be better

Reward yourselves when the trip is over

# Additional Resources

- <https://www.davidsongifted.org/gifted-blog/sensory-issues-in-gifted-kids/>
- <https://www.parentingforbrain.com/asynchronous-development/>
- <https://www.gro-gifted.org/neuroscience-of-giftedness-greater-sensory-sensitivity/>
- <https://www.aoa.org/healthy-eyes/caring-for-your-eyes>
- <https://giftedhomeschoolers.org/resources/parent-and-professional-resources/articles/issues-in-gifted-education/living-with-sensory-sensitivities/>
- [http://www.hoagiesgifted.org/positive\\_disint.htm](http://www.hoagiesgifted.org/positive_disint.htm)
- <https://www.betterup.com/blog/human-senses>



## Books

# Questions? Comments?

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Please email me at

[drmatt@theneurodiversitycollective.com](mailto:drmatt@theneurodiversitycollective.com)

Website:

[www.theneurodiversitycollective.com](http://www.theneurodiversitycollective.com)

Facebook:

[www.facebook.com/drmattzakreski](http://www.facebook.com/drmattzakreski)

Mother, I am  
tired, cold, hungry,  
cranky, and my  
shirt itches.

Do you actually  
think I will learn  
anything today?





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