



1



2

Sensory Integration – for whom?

- ▶ Who do you work with that you expect today's training will apply to?
- ▶ Type into the chat box



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Intro to
Sensory Integration

8 SENSES
The Sensory System

SIGHT, TOUCH, HEARING, TASTE, INTEROCEPTION, VESTIBULAR, PROPRIOCEPTION, SMELL

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What is **Sensory Integration?**

- Sensory Integration refers to the way the brain receives and interprets information from all of our senses, allowing us to organize and make sense of sensory input from our environment and respond appropriately to it



5

Let's explore your personal sensory preferences

What is your reaction to these pictures?



6



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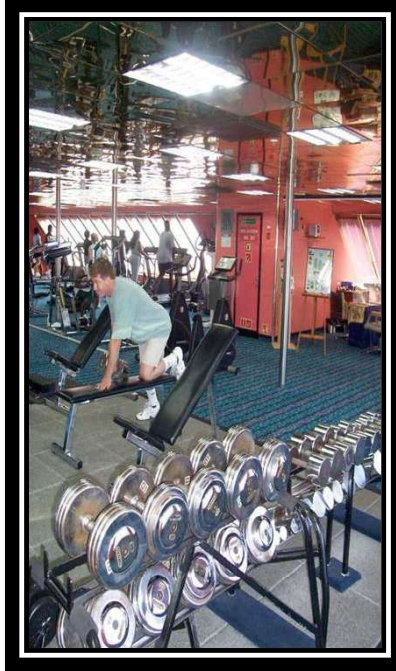
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14

Probably a lot of different responses!

What one person thought was great, another might have found awful to even think about.

15

Autistic people are more likely to have very strong sensory reactions.

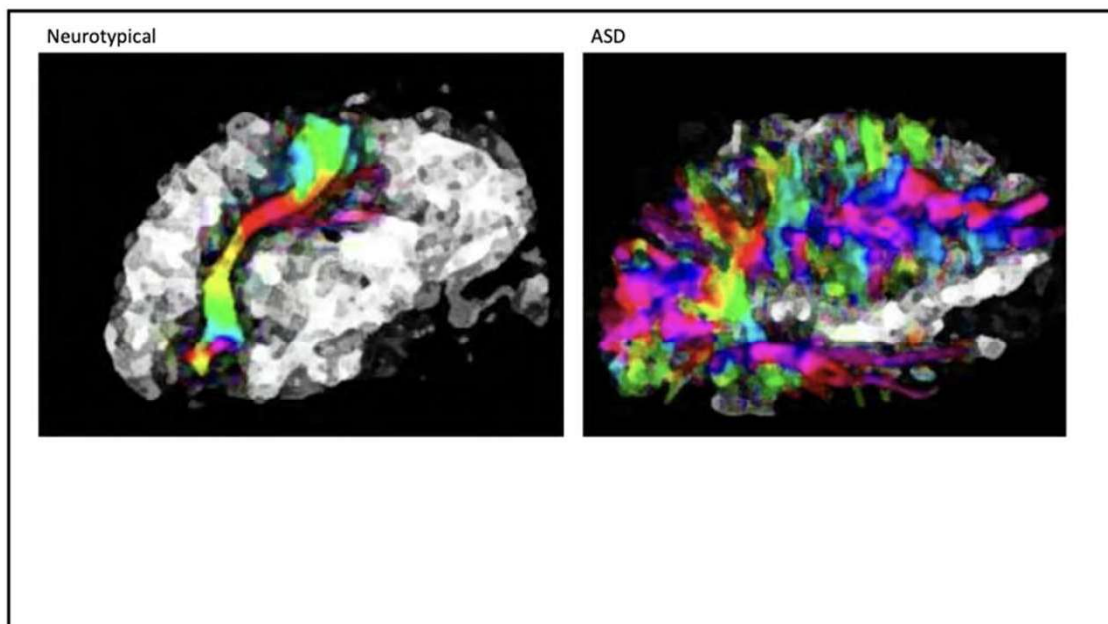
Also . . .

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There are many reasons a person struggle with sensory integration:

- Autism
- Sensory processing disorder
- Dementia
- Other disabilities
- Trauma history
- Hypervigilance
- Neurodivergence

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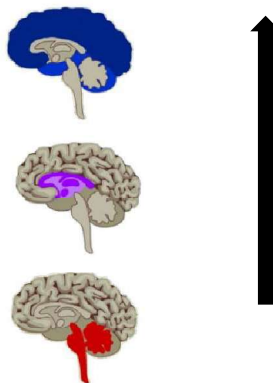
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We will focus on things that would be helpful regardless of **why** someone struggles with sensory integration.

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Sensory happens in the first part of the brain

If someone's senses are off, you have to deal with that first. Or else the person will be stuck.



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What does it look like when someone is struggling with sensory integration?

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Avoiding or retreating from experiences that would otherwise be neutral or pleasant



22

Seeking or creating intense sensations for themselves



23

Or . . .

- ▶ Meltdowns under certain places or conditions
- ▶ Unexpected fight or flight response in certain places or conditions
- ▶ Meltdowns at certain times of day
- ▶ Or maybe they just end up out of sorts . . . Like they can't use the best part of themselves; their window of tolerance is smaller

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What is a “meltdown?”

- A “meltdown” is an intense response to an overwhelming situation -- when someone becomes completely overwhelmed and temporarily loses control of their behavior.
- Creating a sensory-friendly environment makes it less likely that one will happen to anyone.
- Often, it is about many things building up to the moment, not just the “last straw”



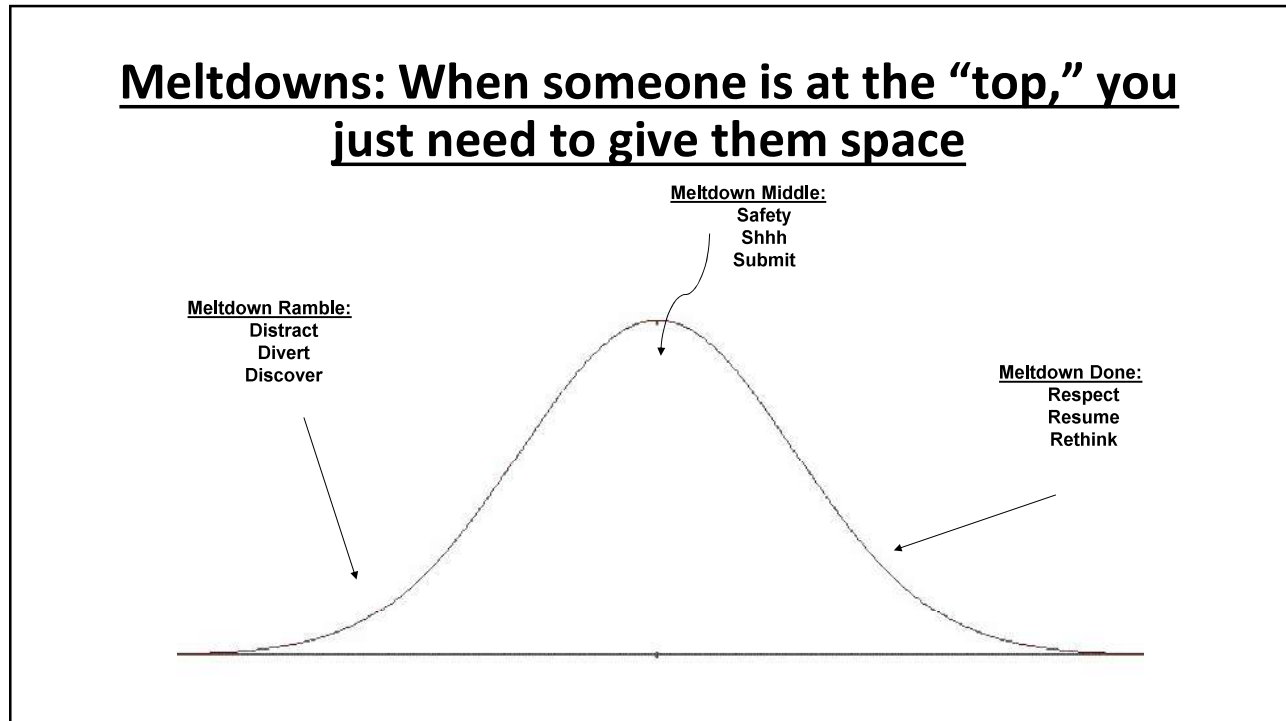
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If a meltdown happens

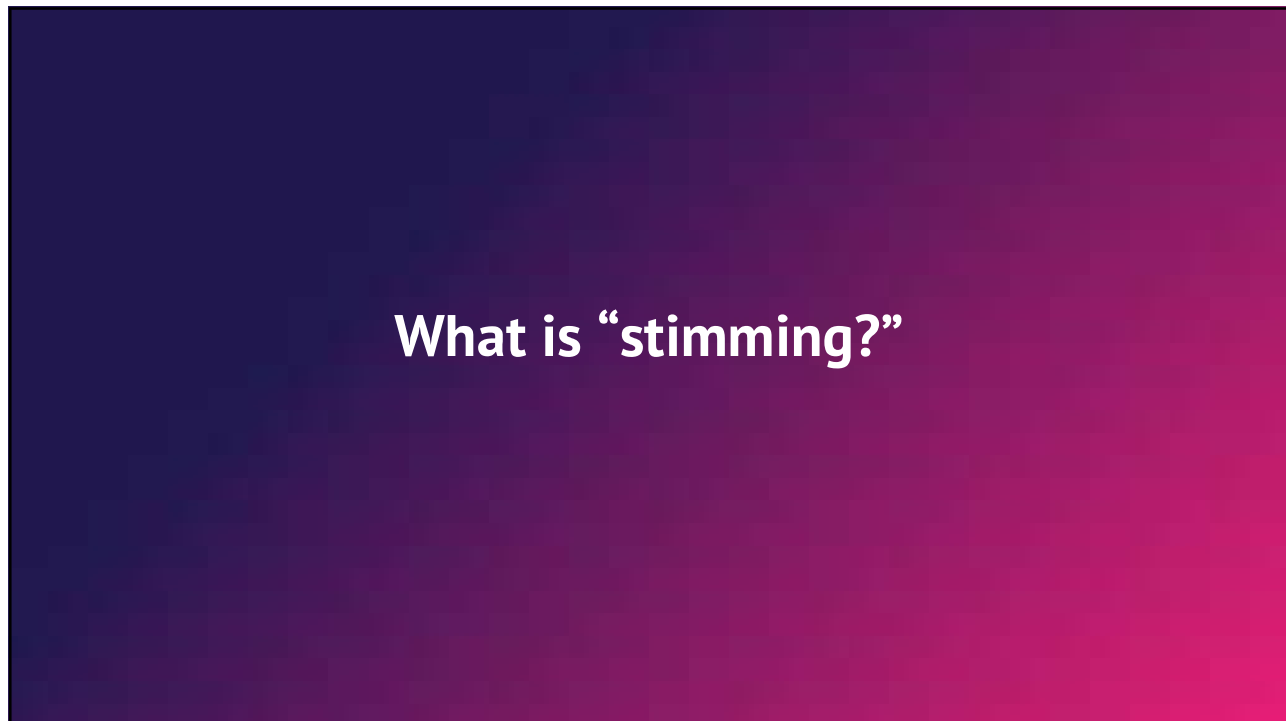
- If it does happen, move other people away and give the person privacy to come back into control of their body
- Once it has started, there is nothing anyone else can do to stop it, until it runs its course
- Sensory-friendly event makes it less likely that someone will have a meltdown, but we should be prepared to support skillfully if it does
- Again – move other people away and give the person space



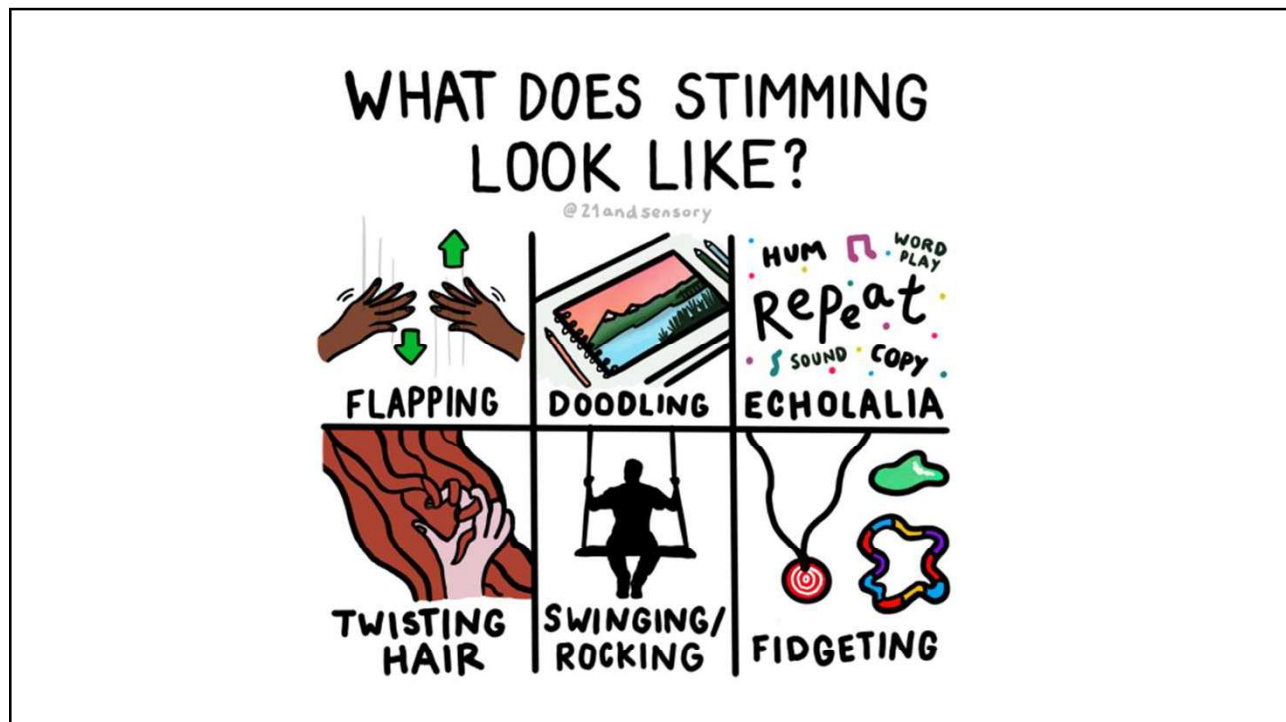
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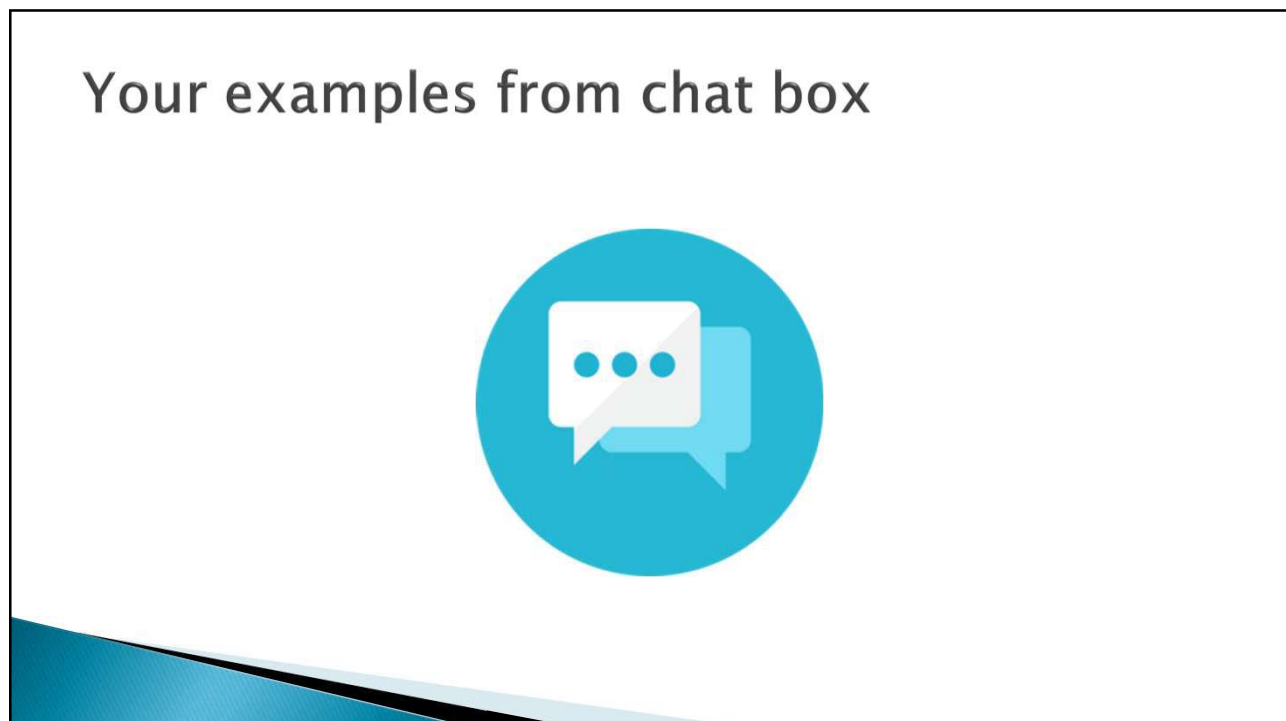
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Sensory Integration: A key to feeling safe & calm



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Combine sensory smarts with your other skill sets

- ▶ How it fits in with trauma treatment and trauma-responsive approaches
- ▶ How it fits in with human services . . . Not just autism
- ▶ Understanding how a person experiences the world
- ▶ Need a trans-disciplinary approach

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Transdisciplinary/Integrated Approach

“Professionals on a transdisciplinary team value and respect the information that team members share, and they use this information in their treatment. They also intentionally provide information to others in an effort to ensure cohesive programming. Members of a transdisciplinary team intentionally support the synthesis of discipline-specific theory, goals, and methods.”

– Lynette Scotese-Wojtila, OTR/L, and Lisa R. Audet, PhD, CCC-SLP, 2001

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It’s a transdisciplinary approach that supports people with what they need to thrive.

(And that’s why TIC isn’t just about “treating” capital T trauma, it’s the essential framework for human services.)

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Key understandings:



- Everyone processes sensory input in their brain & nervous system
- Multiple senses are processing at once
- Everyone seeks sensory input for balance and a feeling of integration
- For some people, the challenge to integrate that information is a **huge** deal

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We know the 5 senses . . .



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We also have a Vestibular sense

Vestibular = Sense of balance

People who rock, or who LOVE going on a swing, or
who get mad when the car stops moving . . .

Those are people who crave MORE vestibular input

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Proprioception = the 7th sense

Proprioception = Your sense of where your body is
related to other people and things.

People who calm with squeezing their body, or push
against things intensely . . .

Those are people who crave MORE proprioceptive
input

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Feeling Balanced:
Your senses feel just right



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Some people's sensory "cup" overflows



"Too much! I've overwhelmed!"

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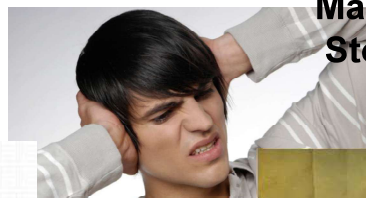
Over responders (hypersensitive)

(May overreact with minimal sensory input)



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Characteristics of Over Responders
Sensory Sensitive/Avoids



Got to Get Away From
It!

Tolerance to
Fabrics



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Other people's have a leak



"I can't get
enough!
More! More!
Again!"

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Under Responders

(hyposensitive)

(requires a lot of sensory input to respond)

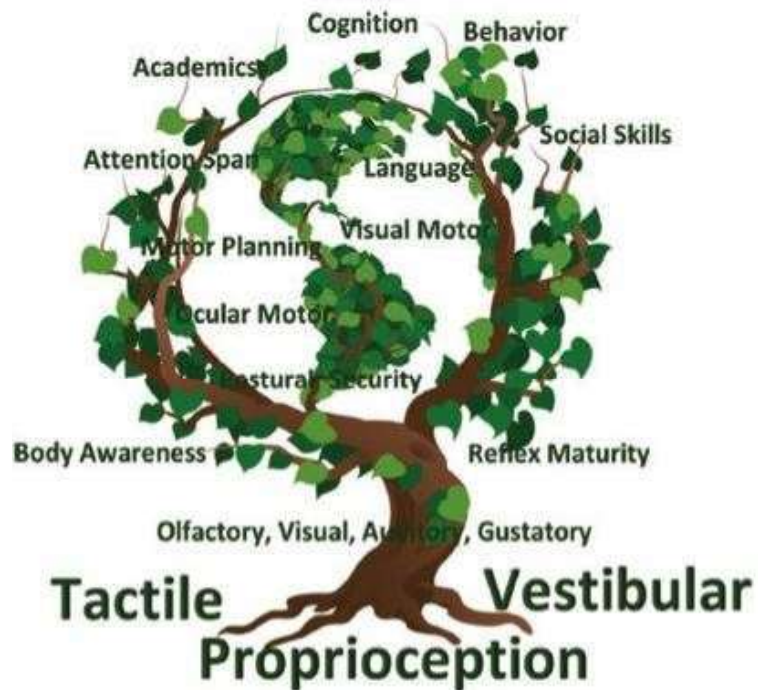


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Characteristics of Under Responders Seeking/Craving Input



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Working with Occupational Therapists



- Yes, refer out for assessment and assistance
- Don't be afraid to talk about it if you aren't an OT. Remember, **trans**disciplinary, not silos.
- Making a sensory support available rarely can hurt a person. If they don't like it, they'll walk away (examples: weighted blanket, frequent shower, swingset)
- But the OT will help you apply it in ways that really make a difference

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We are trying to develop “eyes to see”:

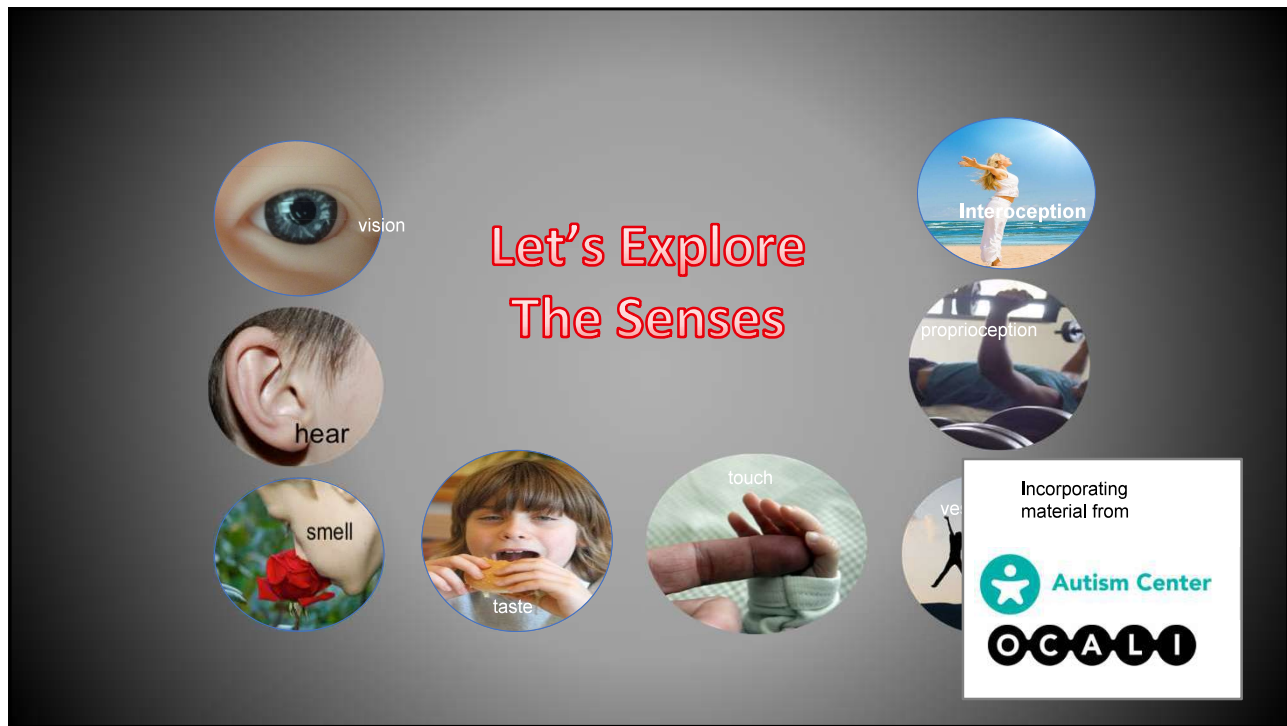


- When sensory integration is taking someone out of their window of tolerance
- When someone has an unmet need for sensory input
- When proactive or structured sensory experiences would improve someone's ability to do or tolerate new things
- When it's time to refer for sensory assessment by an OT

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Auditory System: Example Characteristics

- Sensitivity to sound frequently reported
- Covering ears
- Head-banging
- Attends to sounds that are constant
 - ❖ for example 'fan motor'
- Makes self-induced noises –
 - ❖ for example 'humming to self'
- Noises appear to cause fear; pain; confusion
 - ❖ shutting down or escalating or leaving the environment
- Sensitive to pitch or complexity of sounds...not just volume
- Different types of voices may result in different types of reactions. (female vs. male vs. child)



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Interventions to Support Auditory (Hearing)



Alerting = Irregular, loud, fast beats

Calming = Predictable pattern of long duration, quiet, familiar

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Interventions to Support Auditory

- Limit conversation
 - Audio tape the environment and review to determine if too much
 - Staff agree to cue each other as a reminder to lower the volume
- Reduce excessive talking
- Wait 10 seconds (or longer) after directions to allow for processing
- Lower voice volume/speed
- Teach strategies for “too loud”
- Affirmations/positive self talk
- Headphones, ear buds (music)
- Noise cancelling headphones or ear plugs (eliminate)
- Turn off (or down) unnecessary bells/PA announcements
- Provide “White Noise”
- Develop a ‘quieting’ activity
- Use gestures, written words, visual supports
- Consider the type of music used



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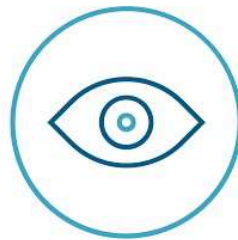
Visual System: Example Characteristics

- Overly sensitive to light/sunlight. Even on cloudy days
- Covering eyes
- Uses peripheral vision
- Lack of attention
- Excessive attention to moving objects; bright colors; shiny surfaces; patterns; lights
- Unable to focus on one particular item when multiple items in visual field
- Limited or no eye contact
- Arranges objects in certain ways; upset if out of order
- Low tolerance to visual imperfections



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Interventions to Support the Visual System



Alerting = bright lights, lots of color, variety

Calming = dim lighting, muted colors (blue, green), plain walls

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Interventions to Support the Visual System

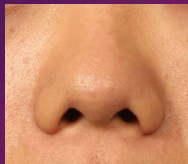
- Cubicles/Partitions
 - Minimize wall decoration
 - Consider the color of walls based on the function of the room
 - Dim lights; use natural lights/lamps; use fewer lights
 - Indirect lighting/filtered light vs. Overhead lighting
 - Limit visual clutter; organize materials
- ▢ Baseball cap; sunglasses... even inside or on cloudy days
 - ▢ Different color sunglasses' lens
 - ▢ Hats with brims
 - ▢ Use visual supports frequently to provide information
 - Count cue, visual timer, visual schedule
 - ▢ Elevate materials (incline board/binder)
 - ▢ Visualization techniques



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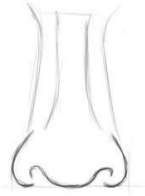
Olfactory System: *Example Characteristics*

- Explores environment by smelling
- Prefers/avoids environment, objects with a particular odor
- Avoids environments because of odors, e.g., K-mart, McDonalds
- May avoid an individual due to an associated odor, e.g. perfume/cologne
- May recognize individuals / situations by the smell
- May seek out specific types of smells to alert or calm self



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Interventions to Support Smell (Olfactory)



*Alerting = Cold, fresh air, peppermint,
menthol, eucalyptus, pine*
Calming = Vanilla, lavender, coconut

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Interventions to Support Olfactory Sensitivities and Needs

- Be cautious of individual/environment smells
 - use scent-free soaps, shampoos, lotions
- Consider use of individual 'smell' as reinforcement or calming support
 - scented lip balms, lotion, sachet, film canister containing cotton ball with scented oil, scented markers and pencils
- Don't require person to be near areas of meal prep, cooking, cleaning
- Eliminate or reduce the use of perfumes and lotions when with individuals with ASD
- Provide calming scents - lavender or vanilla
- If seeking smell, try strong/alerting odors – peppermint or citrus



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Gustatory System: *Example Characteristics*

- Explores environment by tasting
- Self-induced vomiting with certain foods
- Tastes or eats non-edibles (Pica)
- Stuffs food in mouth
- Prefers/avoids certain foods; textures
- May have very limited diet due to inability to tolerate a variety of foods.
- May prefer strong flavors , such as spicy and hot
- May cover foods in ketchup (or other type of sauce)



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Interventions to Support Eating (Gustatory)



Alerting = cold, sour/tart, spicy, minty or crunchy, bitter

Calming = warm, smooth sweet

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Interventions to Support Gustatory

- Assess: Is it Taste or Is It Texture?
- Provide variety
 - Food that require chewing and biting (bagels, granola bars, fruit roll ups, gum, beef jerky, carrots, celery, pretzels, graham crackers, rice cakes, dried fruit, apples)
 - Foods that are sour, spicy, salty, and crunchy
 - Hard candy, suckers, popsicles
- Use straws to drink liquid; applesauce; milkshake; yogurt
- Be aware of non-edibles in the environment that could be a risk
- Visual supports of 'what to eat' vs. what not to eat
- Make available the condiments that the person prefers – may result in eating more variety
- Create a 'pleasant' eating environment
 - Never 'force' someone to eat (but entice)



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Two Tactile Systems

Protective



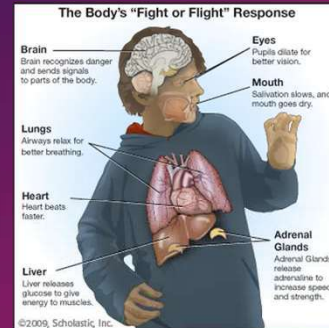
Discriminative



62

Tactile System: The **Protective** System

- Activates “Fight, Fright, or Flight”
- Born with this system for protection and survival. A Primal System.
- Stimulated by **light touch, pain, temperature**
- Immediate responses and reactions
- **Not** a cognitive response. Do not address as a choice.



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Tactile System: The **Discriminative** System

- Calming and Organizing System
- Activated by deep touch/pressure, and vibration
 - ❖ Parasympathetic System
- Allows for feeling the quality of the items touched and conveys understanding
- Stimulates a cognitive and planned response
- Helps us learn and think



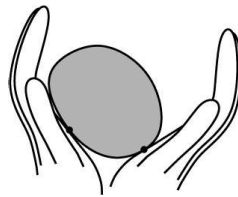
64

Tactile System: Example Characteristics

- Distractibility
- Hyperactivity/Hypervigilant
- Difficulty with Social Space
- Pain Sensations can vary: Exaggerated to No Awareness
- Sensitive to types of clothing and textures
- Avoids getting hands dirty
- Overly-sensitive to heat and cold.. Or NOT sensitive.
 - ❖ May not even seem to notice
- Does not like to be touched
 - ❖ Does not like hand over hand assistance
 - ❖ May be fine initiating the touching others
- Prefers firm touch/deep touch to a light touch or tickle
- Describes touch as painful. The thought of touch increases anxiety and possibly 'escape' behaviors
- Intolerant of wearing glasses/hearing aid
- Disorganized when touched

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Interventions to Support Touch Sensitivities (Tactile)



Alerting = Light touch, cold
Calming = Deep pressure, warmth

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Strategies for Tactile System

- No Surprises! Caution when entering a person's personal space or touching. Ask permission.
- Pressure touch - firm
- Provide visual boundaries for personal space
- Create safe/escape area; individual work area
- Hand prep activities ('wake up your hands') and Hand fidgets
- Water/Swimming/Baths
- Aware of clothing textures/tags - Seams
- Jewelry; coil and rubber band bracelets
- Massage; lotion
- Vibrating massagers
- Opportunities to draw/doodle
- Vary objects, textures, temperatures, shapes

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Remember . . .

Vestibular = Sense of balance

People who rock, or who LOVE going on a swing, or who get mad when the car stops moving . . .

Those are people who crave MORE vestibular input

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Vestibular System: Over- (Hyper) Sensitive **Example Characteristics**

- Fearful reactions to ordinary movement activities
- Difficulty learning to climb or descend stairs or hills
- Apprehensive walking or crawling on uneven or unstable surfaces
- Seem fearful in space
- Appear clumsy
- 'Grounded'- Want feet on the ground



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Vestibular System: Under- (Hypo) Sensitive **Example Characteristics**

- Actively seek and demonstrate a need for intense movement experiences (body whirling, jumping, spinning, spinning objects, pacing, rocking)
- Trying continuously to stimulate the vestibular system (even visually)



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Interventions to Support Movement (Vestibular)

Important to work with OT



Calming = Slow, steady, rhythmical back and forth movements, flexed body positions, predictable

Alerting = fast, irregular, extended positions, rotary

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Vestibular Movement can Alert or Calm

Alerting



- **Uncontrolled**
- **Rapid**
- **Changeable**
- Example:**
- **Spinning and swinging on a tire swing**

Calming



- **Controlled**
- **Linear**
- **Predictable**
- Example:**
- **Rocking Chair or Glider**

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Strategies for Vestibular Input

**Built Proactively Into the Individual's Day
NOT a 'Reward'**

- Rocking Chairs/Sliders
- Walking, running laps, hiking
- Dancing
- Yoga
- Air filled cushions to sit on
- Swinging, sliding activities
- Swivel Chairs



73

Proprioception = the 7th sense

Proprioception = Your sense of where your body is related to other people and things.

People who calm by squeezing their body, or push against things intensely . . .

Those are people who crave MORE proprioceptive input

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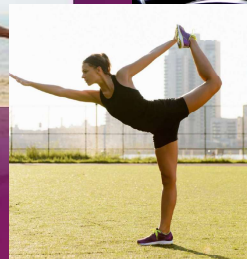
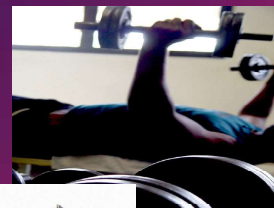
Proprioceptive System: Example Characteristics

Clumsiness, a tendency to fall
Bumps into walls
A lack of awareness of body position in space or amount of space needed (ex: bumps into people)
Odd body posturing
Poor handwriting/resistance to handwriting
Difficulty manipulating small objects (button/snaps)
Disorganization with materials/thoughts
Eating in a sloppy manner
Resistance to new motor movement activities

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Proprioception Strategies

- Basically...
Anything that provides compression or extension to joints and muscles is a strategy
- The bigger the joint... the more input is provided



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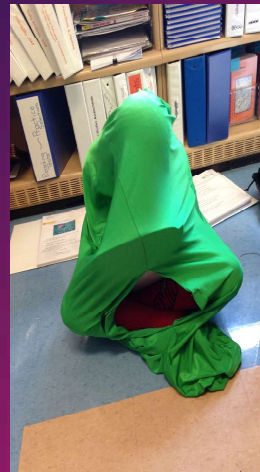
Strategies for Proprioceptive Input

Built Proactively Into the Individual's Day - NOT a 'Reward'

- Yoga
- Heavy work jobs (carrying, lifting, pushing, pulling)
- Weighted Blankets and Pillows, Hats, Wrist Bands, Compression Vest
- Swimming
- Lifting weights
- Relaxation exercises (stretching; breathing)
- Fidgets
- Theraband exercises/ placement on chair legs
- Shaking body parts
- Chair push ups, wall push ups, desk push up
- Neck rolls, shoulder shrugs
- Chewing gum
- 'Body Sock'

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Body Sock
(Southpaw Enterprises)



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Eighth sense: Interoception

Located: specialized cells that collect sensory information from tissues in the body (organs, muscles, skin, bones etc.)

Activated by: sensations throughout the body

Function: allows us to feel hunger, thirst, need for bathroom, nausea, itch, pain, body temperature, heartbeat, breathing rate, muscle tension, sexual arousal, physical exertion and emotions

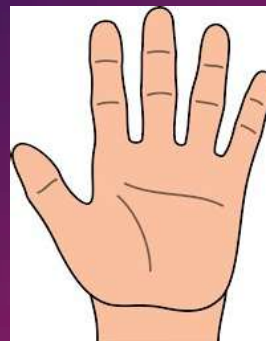
Can also affect 'mindfulness'

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Interoception

Interoception:
The Quality of the
Relationship between the
Mind and the Body.
Newer/emerging topic.

Recommended reading:
Kelly Mahler.



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Interoception and Self-Monitoring

- To self-regulate, self-monitor emotions and use strategies, the person must be able to read the body signals and respond in a timely manner
- Weak Interoception may play a role in an individual responding to emotional regulation, self-management, coping strategies *If they are unable to 'read' their own body, they may struggle to understand when or how to use strategies.*

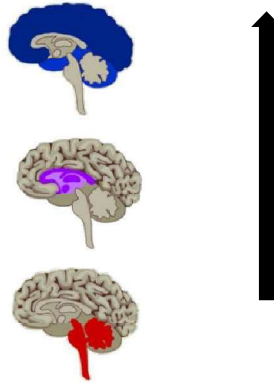
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Pulling it all together . . .

82

Sensory happens in the first part of the brain

If someone's senses are off, you have to deal with that first. Or else the person will be stuck.



83

How do we make
something “sensory-
friendly”?

84

Intensity of Sensations

- Sensations might be experienced with an **intensity** that is different from the majority of other people.
- A sensory-friendly environment seeks to help people get sensory input in the way that is “just right” for them.



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Seeking Sensations

- A person might find certain sensations particularly enjoyable, and might spend extra time seeking that one sensation.
- A sensory-friendly environment welcomes people to savor those moments.



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Avoiding Sensations

- A person might find certain sensations unpleasant in a way that is different from the majority of others.
- A sensory-friendly environment tries to make it easy for people to avoid sensations that don't feel good.



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Predicting sensations

- Warnings or information about what sensory input is coming in the near future) helps a person to decide if they want to experience or avoid those sensations, and puts them in control of their choices, empowering them to decide how they want to handle the sensation.
- A sensory-friendly environment seeks to empower people with that knowledge and those choices.



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Non-judgmental – “be yourself”

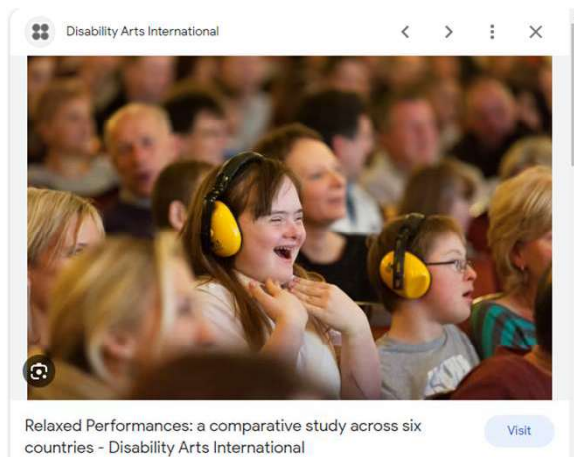
- A person might act in a way that others don’t typically expect in that environment.
- A sensory-friendly setting welcomes people to interact as they really are and on their own terms, and encourages people to put their energy into engaging with the experience, rather than trying to contain their own reactions for the sake of other people.



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A note about the non-judgmental environment:

- What Broadway theaters call “sensory-friendly performances,” London theaters have started calling “**relaxed performances**.”
- For a lot of people, the “relaxed” expectations of others is the most welcoming element



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Being a sensory-smart professional



- Work to “develop the eyes to see” how people are integrating sensory information
- Hang out with OTs in the autism field
- It’s about meeting a person’s physical needs, not to be used as a reward
- Part of creating felt safety
- Can be an essential component for someone to thrive

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Summary of strategies



- Proactive input as part of regular schedule
- Prioritize power senses to prepare for challenging experiences (tactile, proprioception, vestibular)
- Take sensory breaks well before point of overwhelm
- Not very helpful when the person is already upset or at peak of agitation
- Look at potential environmental stressors that others don’t notice
- Refer to a sensory-smart Occupational Therapist

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