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# Sensory Awareness

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## We are all sensory beings

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## Do you like or dislike these?

Olives	Perfume
Cotton wool	Hand driers
Fireworks	Oil / hand cream
Shaving foam	Having a massage
Spicy food	Clothes tags
Coffee	Sand
Rollercoasters	Mashed potato
Woollen jumpers	Lifts/escalators




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## Sensory Preferences

- Many of us have sensory preferences
- We can happily live with our preferences having very little impact on our daily lives
- We make decisions everyday around our sensory preferences
- These include which choices we make about foods we eat, clothing we wear, places we visit
- The only way we receive information from our environment is through our sensory system



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# Sensory development

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Sensory integration is a process that occurs and develops as the central nervous system develops and the child engages with the environment.



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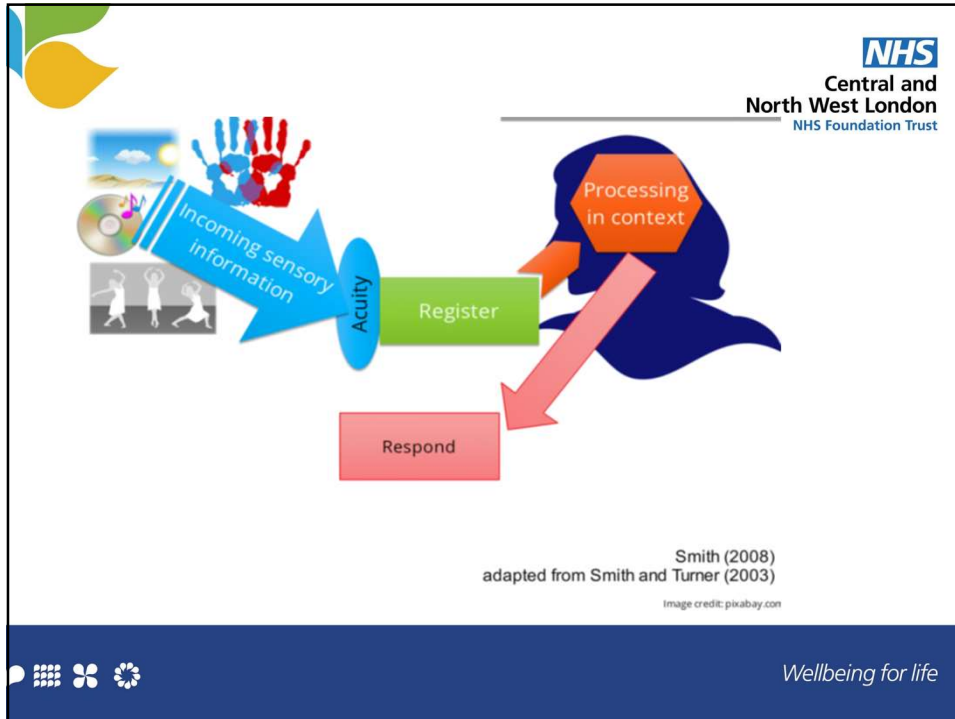
# What is sensory processing


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- Sensory processing or sensory integration is a neurological process that occurs in all of us.
- We constantly take in sensory information through our bodies from the world around us. As our brains integrate this sensory information it becomes meaningful to us.


“Typical” sensory integration allows us to respond to the specific sensory input we receive automatically, unconsciously, efficiently and comfortably.

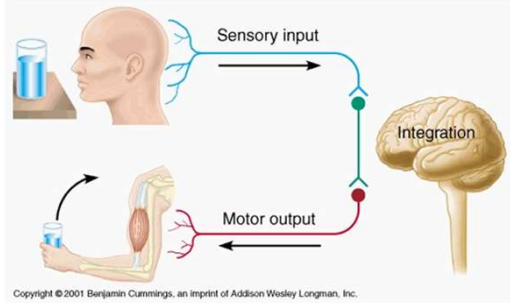
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# What is Sensory Processing?

  
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**Sensory Processing** is the path our brain takes to receive, register, interpret, prioritise and decide how to behave and respond appropriately to the sensory information received from the environment via our 8 sensory systems.

**Our brains choose to:**


- Screen or ignore sensory stimuli
- Notice it and respond to the sensory stimuli
- Adapt to the sensory stimuli- through learning, routine, environmental familiarity




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# Why is this important?

  
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If sensory input is negatively impacting a young persons life & causing problems.....



I cry and shield my eyes from the sun and other bright lights.

I hate having my hair washed, brushed or cut

I have "selective hearing or difficulty listening"

I am a picky eater, I resist new foods and textures


I complain about tags in my clothing

I seem to be unaware of normal touch or pain; I often touch other too hard or too soft

I hate being tickled or cuddled

I have poor gross motor skills, such as running, and riding a

I always walk on my tip toes



I have trouble focusing and/or concentrating

I am overly sensitive to loud sounds such as vacuums and blenders

I am always smelling people, food and objects


I chew on everything

I have poor fine motor skills such as handwriting and cutting

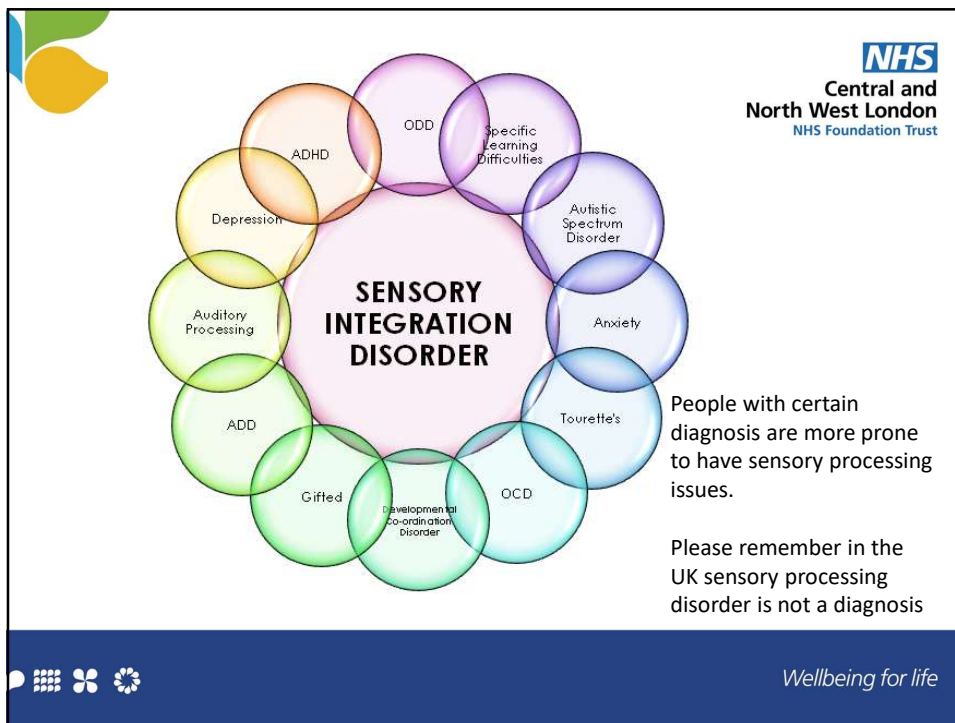
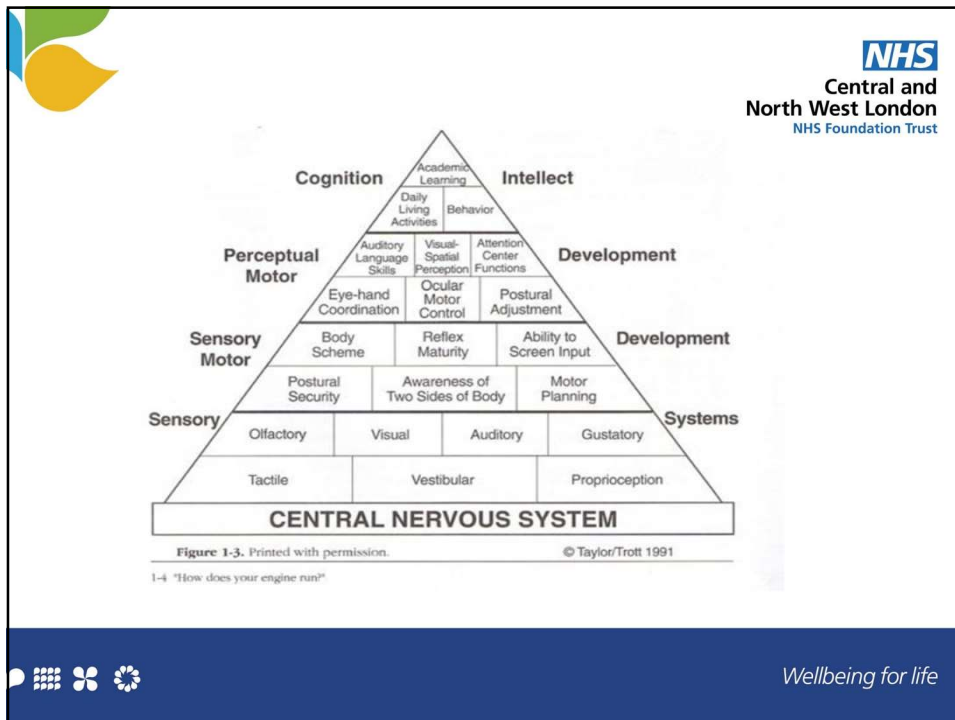
I have difficulty dressing myself



I sit with my legs in the "W" position

I put my socks on "just so" or maybe I never go




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## Sensory Processing Difficulties

- Sensory processing difficulties occur when there is a breakdown or interference within the pathways of the sensory systems to the brain as a result the central nervous system does not get the information needed to produce an appropriate response
- This does not mean the brain is damaged but the information from the senses are not flowing and integrating efficiently
- This causes an atypical behavioural response that impacts on everyday functional activities e.g. personal care, school, leisure activities, family events
- OT'S become involved to explore the atypical response in further detail
- Important to highlight up to 96% of Autistic people have sensory difficulties




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## What does it feel like?

Video contains flashing imagery

<https://youtu.be/aPknwW8mPAM>




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## The impact of unmet sensory needs

- Sensory overload- reduced processing abilities at times, difficulties with regulating emotions, high sensitivity levels and multiple trigger points
- Social/ emotional regulation- reduced understanding of the social environment, difficulty with managing emotions, difficulty understanding others emotions
- Communication- struggle to communicate how they feel resulting in “melt down”, aggression towards them selves, others or the environments, or “shutdown” and isolation
- Physical motor performance –reduced ideation and planning- sequencing, coordinating and organising tasks resulting in poor execution of any daily task
- Psychological- Mood- anxiety levels, depression, trauma, feeling unsafe- continuously living in fight or flight mode




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## Sensory Behaviours

- Hyper-reactivity (high responsivity to sensory stimuli) avoids any sensory stimuli and may have a adverse reaction E.g. tactile defensive and auditory sensitivity
- Hypo-reactivity (low responsivity to sensory stimuli) lacks awareness of sensory stimulus, e.g. picking wounds, not responding, not feeling pain
- Sensory seeking (looking for) NEEDs sensory stimulation eg whirlwind presentations, crashing and bumping into things, difficulty maintain attention, always on the go, challenging boundaries, in personal space
- Sensory sensitivity (avoiding) withdrawn, appears disengaged, rigid, particular
- Stimming/ anchoring- self regulation strategy that is repetitive, calming and soothing in nature e.g. flapping arms, wringing hands, counting, lining items up, rocking, making noises – ALWAYS support (non injurious) stimming



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## The world is different

- People with neurodiversity do not experience the world in the same way as those who are neurotypical
- **“There is no therapy for neurotypicals to be more autistic so why would there be therapy for autistic people to become neurotypical”**
- We have to be tolerant of sensory difference
- Sensory issues have the biggest impact for autistic people

*HOW DO YOU WORK WITH INDIVIDUALS SENSORY NEEDS?*

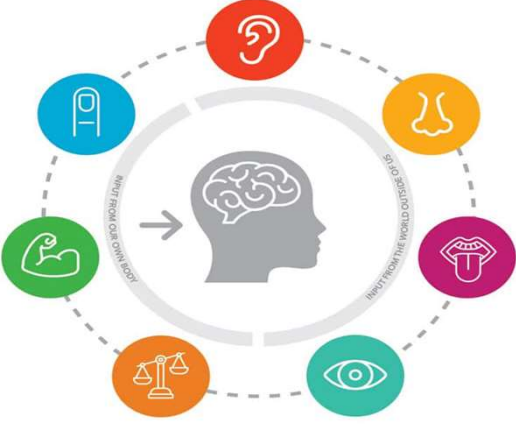


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## Key Sensory Systems?



- 5 well known systems
- 3 additional key systems
- Minimum of 8 systems
- Up 56 systems
- Synaesthesia



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## Smell- Olfactory

  
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**Provides us with an awareness of danger**

**Linked to memories and has emotional connections**


**Contributes to social communication**

**Smell discrimination contributes to eating and drinking**


**Can limit where young people will go or who they can engage with**




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## Olfactory Thresholds

  
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Low sensitivity thresholds	High sensitivity thresholds
<ul style="list-style-type: none"> <li>➤ Excessive need to smell items/people.</li> <li>➤ Craves strong smells</li> <li>➤ Does not seem to smell even strong smells.</li> <li>➤ Pica</li> </ul>	<ul style="list-style-type: none"> <li>➤ Poor tolerance to smells</li> <li>➤ May gag easily at smells.</li> <li>➤ Have allergies to smells.</li> <li>➤ Bland restricted body products.</li> <li>➤ Avoids certain people &amp; places shops/churches etc.</li> <li>➤ Food shops are challenging – especially milk, cheese &amp; fish aisles/markets.</li> <li>➤ Makes family living hard challenging</li> </ul>


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## Taste- Gustatory

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**Aids pleasure through exposure to different flavours**

**Draws from memories, emotional connections and imagination which influences food and drink preferences**


**Identifying what's in the mouth via taste buds**

**Stimulates digestive system and facilitates production of saliva which aids the breakdown of food allowing the body to absorb nutrients**





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## Oral Thresholds


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Low sensitivity thresholds	High sensitivity thresholds
<ul style="list-style-type: none"> <li>➤ Excessive need to taste items/people.</li> <li>➤ Craves strong taste</li> <li>➤ Does not seem to taste even strong tastes.</li> <li>➤ Pica</li> </ul>	<ul style="list-style-type: none"> <li>➤ May gag easily</li> <li>➤ Has many food allergies</li> <li>➤ Bland restricted diet</li> <li>➤ Even textures, soups liquidised</li> <li>➤ Poor tolerance to textures pulses, cous cous, rice</li> <li>➤ Eating problems</li> </ul>


**“Jamie's coping strategies include eating the same meal every night - filled pasta with sauce”**



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## Sight- Vision

  
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**Most highly developed sensory organs and contribute to 80% of the information we gather from the environment**


**Large part of none verbal communication.**

**We build our visual perception skills throughout our life time e.g. depth perception= completing stairs and taking correct height step over thresholds. Figure ground discrimination= finding a person in a crowd of people, visual spatial skills= using internal brain map to navigate in the dark around a room, visual motor skills= serving and hitting a tennis ball, visual memory-remembering where items were left last**




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## Visual Thresholds

  
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Low sensitivity thresholds	High sensitivity thresholds
<ul style="list-style-type: none"> <li>➤ <b>Difficulty finding objects against a cluttered background.</b></li> <li>➤ <b>May miss things.</b></li> <li>➤ <b>May scan and rescan if looking for a lost item.</b></li> <li>➤ <b>May come up too close to people to see them</b></li> <li>➤ <b>Face blindness</b></li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>May be uncomfortable in strong light.</b></li> <li>➤ <b>May like blinds/curtains closed.</b></li> <li>➤ <b>May wear sunglasses/caps even indoors.</b></li> <li>➤ <b>Has difficulty scanning the environment.</b></li> <li>➤ <b>Focus on detail rather than whole picture</b></li> <li>➤ <b>Difficulty sleeping</b></li> </ul>


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## You could help by


- You could make changes to the environment, such as reducing fluorescent lighting, providing sunglasses, using blackout curtains and/or creating a workstation in the classroom with high walls or divides on both sides to block out visual distractions.
- Understand and accommodate

**“For me a typical environment is pretty chaotic”**




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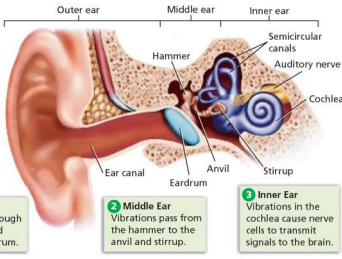
## Sound/ Hearing- Auditory



Receptors located in inner ear and allow us to identify loud, soft, near, far, high, low sounds coming from the environment. Allows us to connect to the world and communicate effectively

Auditory processing is connected to the limbic system, familiar sounds are associated with past experiences linked with auditory memory.


Contributes to balance with strong connections to vestibular system




**1 Outer Ear**  
Sound enters through the ear canal and vibrates the eardrum.

**2 Middle Ear**  
Vibrations pass from the hammer to the anvil and stirrup.

**3 Inner Ear**  
Vibrations in the cochlea cause nerve cells to transmit signals to the brain.



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## Auditory Thresholds

<p><b>Low sensitivity thresholds</b></p> <ul style="list-style-type: none"> <li>➤ Appears not to hear even when called.</li> <li>➤ Fascinated by certain sounds and repeats them often.</li> <li>➤ May generate own personal world of extra noise.</li> <li>➤ Difficulty integrating visual and auditory information</li> <li>➤ Limited speech development</li> </ul>	<p><b>High sensitivity thresholds</b></p> <ul style="list-style-type: none"> <li>➤ Defensive to sounds may cover ears.</li> <li>➤ Easily distracted by sounds.</li> <li>➤ Constantly makes noise to block out other sounds.</li> <li>➤ May wear hats, headphones &amp; hair over ears.</li> <li>➤ May hear constant background noise</li> </ul>
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## You could help by

- Using visual supports to back up verbal information, ensuring that other young people are aware
- Shutting doors and windows to reduce external sounds
- Preparing the young person before going to noisy or crowded places
- Providing ear plugs and music to listen to
- Creating a screened workstation at school, positioning the person away in a quiet area

**“A sudden loud announcement in a supermarket is pretty similar in effect to a flash-bang grenade used to confuse people during wars.”**

**“Do you hear noise in your head? It pounds and screeches. Like a train rumbling through your ears”**

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# Leah



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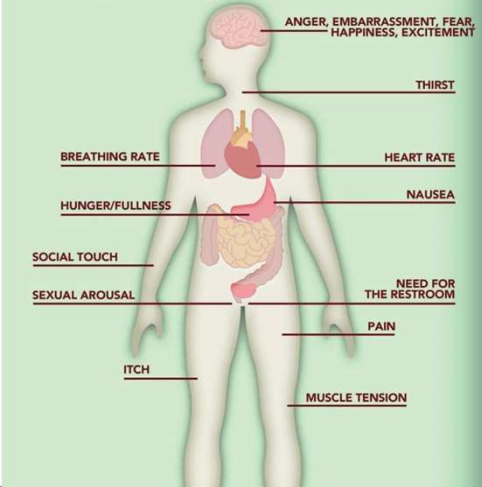


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# INTEROCEPTION THE EIGHTH SENSORY SYSTEM



ANGER, EMBARRASSMENT, FEAR,  
HAPPINESS, EXCITEMENT

THIRST

BREATHING RATE

HEART RATE

HUNGER/FULLNESS

NAUSEA

SOCIAL TOUCH

NEED FOR THE RESTROOM

SEXUAL AROUSAL


PAIN

ITCH


MUSCLE TENSION

**Interoception is a sense that allows us to notice internal body signals like a growling stomach, racing heart, tense muscles or full bladder.**

**When we notice these body signals our brain uses them as clues to our emotions, mental health and wellbeing**



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## I have difficulty.....

- Recognizing when hungry, thirsty or in pain
- Toileting (daytime and/or night time)
- Identifying when I'm sleepy
- Overly sensitive or not sensitive enough to pain
- Pinpointing symptoms of illness
- Identifying emotions in self
- Identifying emotions in others
- Recognizing building signs of distress (before a full meltdown)
- Independently using coping strategies during times of distress

**“Please recognise what is going on when I cant and don't dismiss me”**



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## Touch- Tactile

Provides us with information regarding:

- Light/deep pressure touch
- Vibration
- Texture, Temperature and external pain

Largest sensory organ of the body

Keeps us safe

Promotes engagement with the physical and social environment


70% of autistic people experience tactile sensory differences






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## Tactile Thresholds


  
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Low sensitivity thresholds	High Sensitivity thresholds
<ul style="list-style-type: none"> <li>• Bumps into things &amp; doesn't notice.</li> <li>• Fidgets, fiddles with small things.</li> <li>• Touches people &amp; things to the point of irritating others.</li> <li>• "Sloppy dresser".</li> <li>• "Grubby", may not notice when face &amp; hands are messy.</li> <li>• Over eats &amp; over fills mouth.</li> <li>• Under or over dressing</li> </ul>	<ul style="list-style-type: none"> <li>• Unusual self-care regimes.</li> <li>• Self care is a challenge (hair washing, hair cuts, tooth brushing).</li> <li>• Bothered by under wear &amp; socks, labels, fastenings or "bits" hanging off.</li> <li>• Will only wear certain clothing/textures.</li> <li>• May move away when others are too close. Avoids contact</li> <li>• Finds medical procedures difficult</li> </ul>


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## Pain and Medicine

  
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"I don't know how much pain I am in"

"Every time I am touched it hurts, it feels like fire running through my body"

- What you think something is, may not be they case
- Don't dismiss the pain or make assumptions
- Alexithymia – cant recognise the sensory input so also cant explain it
- Environment can impact the way people can manage in a medical setting


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# Vestibular

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Provides information about balance and movement e.g. keeps us in an upright position in response to gravity


Different movement can have different effects on us:

- Linear movement (straight/ predictable) can be calming
- Rotary (circular/ unpredictable ) can be alerting






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## Inadequate Vestibular Processing ....

- Poor postural control
- Adjustment to body movement
- Poor equilibrium
- Poor compensatory eye movement
- Poor bilateral motor skills



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## Vestibular Thresholds

High Thresholds	Low Thresholds
<ul style="list-style-type: none"> <li>➤ Seek movement</li> <li>➤ Rocks back &amp; forth</li> <li>➤ Is in constant motion, has difficulty sitting still</li> <li>➤ Appears disinterested</li> <li>➤ Activity “risk taker”</li> </ul>	<ul style="list-style-type: none"> <li>➤ Is afraid of heights</li> <li>➤ Dislikes movement riding in a car</li> <li>➤ Becomes dizzy /sick easily</li> <li>➤ Avoids balancing activities</li> <li>➤ Hates lifts/escalators</li> <li>➤ Dislikes movement</li> </ul>


**“If I want to contribute I need to sit on the floor or keep moving. Sitting still on a chair and balancing takes all my energy and I cant do anything else”**





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## Proprioception

  
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**Input to the muscles and joints that provides us with information on where our body parts are in correlation to space.**

**Gives us a sense of body position and location of our limbs**


**Allows us to grade our movement e.g. amount of force applied**

**Considers timing and control of activities e.g. smooth or jerky**


**Calming, organising and focus benefits as contributes to attention and focus**




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## **Inadequate Proprioceptive Processing.....**

  
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- **Lack of fluidity in movement.**
- **Decreased muscle tone or stiffness.**
- **Difficulty with co-ordination around a joint.**
- **Poor grading of muscle force – calibration.**
- **Tendency to lean or look for support outside oneself.**
- **Craving activities that provide physical input:  
Biting, chewing, play fighting, restraint, hitting,  
punching, crashing into things.**



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## You could help by

- Supporting physical movement
- Positioning furniture around the edge of a room to make navigation easier
- Putting coloured tape on the floor to indicate boundaries
- Using weighted items to provide deep pressure
- Support difficulties with fine motor skills

**"Another way Lion helps is with deep pressure. My sense of shape is sometimes a bit floaty. I can lose the edge of my body and feel as though I am floating apart. Hugging Lion - I pull him into my chest - provides the input my body needs to stop the floating feeling."**



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## What can I suggest.....

<u>Alerting</u>	<u>Calming</u>
<ul style="list-style-type: none"> <li>• Tickles</li> <li>• Chewing</li> <li>• Run, skip, jump</li> <li>• Fast movement</li> <li>• Rotatory movement</li> <li>• Bright lights, loud music</li> <li>• Cold water play</li> <li>• Fidgets</li> </ul>	<ul style="list-style-type: none"> <li>• Deep pressure</li> <li>• Vibration</li> <li>• Bean bags / therapy balls</li> <li>• Lap pads</li> <li>• Slow rocking</li> <li>• Soft lights and music</li> <li>• Stretching / relaxation</li> <li>• Bear hug</li> </ul>



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# Self Regulation



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- Management of emotional responses, stress responses, levels of alertness and attention.
- The purpose of creating an adaptive response is to achieve a goal.
- Self-regulation occurs within our central nervous system and includes the ability to consciously and cognitively regulate our emotions, stress response, alertness & attention.
- When we have self-regulation we are able to use strategies to focus, to keep calm or keep alert.


“ If I am regulated I can manage everything perfectly well, If I am in overload I cant do anything”



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# Emotional zones of regulation






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## ZONES OF REGULATION!


### How can you help yourself?

The BLUE zone	The GREEN zone	The YELLOW zone	The RED zone
 How might you feel? sad tired bored moving slowly	 How might you feel? happy okay focused ready to learn	 How might you feel? nervous confused silly not ready to learn	 How might you feel? angry frustrated scared out of control
What might help you? Talk to someone Stretch Take a brain break Stand Take a walk Close my eyes	What might help you? The goal of this exercise is to get to the GREEN zone. What can you do to be happy, calm and ready to learn?	What might help you? Talk to someone Count to 20 Take deep breaths Squeeze something Draw a picture Take a brain break	What might help you? Stop what I'm doing Make sensible choices Take deep breaths Ask for a break Find a safe space Ask for help

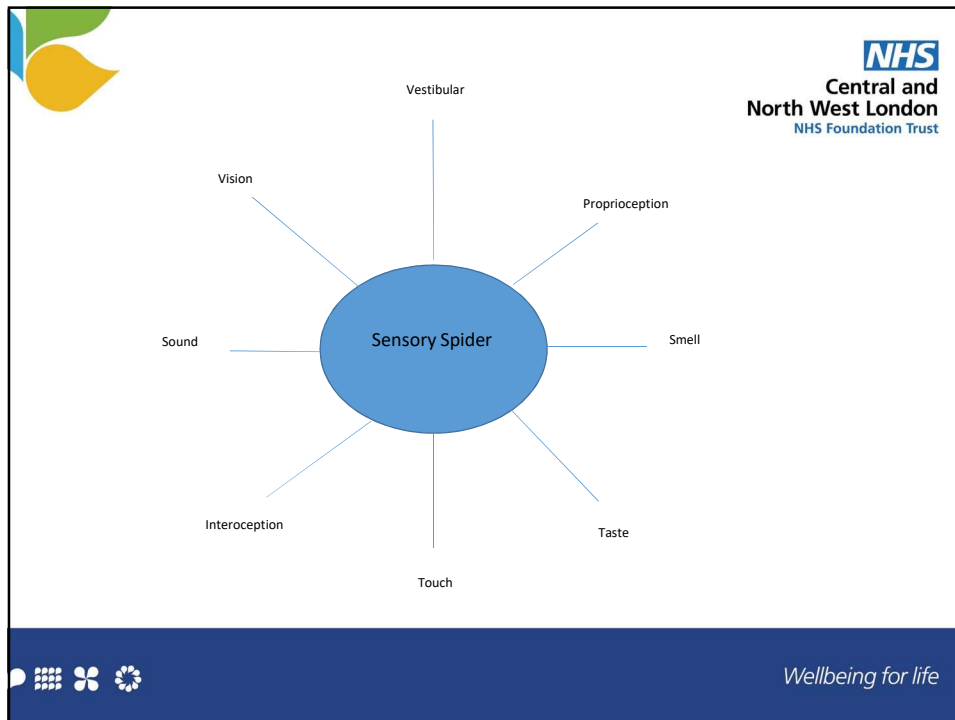
Blue	Green	Yellow	Red
			
Sad Tired Bored Moving Slowly	Happy Calm Good to Go Focused Ready to Learn	Frustrated Worried Slow/Waggle Anxious Excited	Mad/Big Mean Yelling/Screaming Out of Control I Need Time and Space

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Work with young person- they may know what supports their regulation - Observe and be aware of what zone the young person is in. Use strategies to support them.



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**What can I do?**

- Understand individual sensory differences
- Don't expect all young people to be neurotypical
- Consider the impact sensory differences have on young people and families
- Remember nothing is static with sensory differences
- Plan how to work with the persons sensory needs
- Support self regulation
- Be alert to those who need a sensory assessment and / or OT assessment

The slide features a blue footer with three icons (a grid, a flower, and a gear) and the text "Wellbeing for life". The NHS logo and "Central and North West London NHS Foundation Trust" are in the top right.



# Thank you for listening

