

A group of five children dressed as superheroes. From left to right: a boy in a blue suit with a red mask and cape, pointing forward; a girl in a pink suit with a pink mask and cape, holding a red starburst sign with the word 'BOOM'; a girl in a white suit with a yellow mask and cape, holding a yellow starburst sign with the word 'POW'; a boy in a red suit with a blue mask and cape, holding a blue starburst sign with the word 'POW'; and a boy in a green suit with a green mask and cape, holding a green starburst sign with the word 'BOOM'. The background is a plain, light-colored wall.

Understanding Sensory Needs

Early Years Conference
Katherine Fraser
Educational Psychologist
23.10.23

Session Overview

- **Understanding sensory needs**
- **Identifying and supporting sensory needs**
- **Sharing current practice and experience**





Our 8 Senses

- Visual (sight)
- Auditory (hearing)
- Gustatory (taste)
- Olfactory (smell)
- Tactile (touch)
- **Interoception (internal awareness)**
- **Vestibular (balance and orientation)**
- **Proprioception (muscle and joint movement)**



Sensory preferences

- We all have different sensory likes and dislikes.
- We all use sensory strategies to help us regulate and increase our state of alertness.
- Brain filters out unnecessary information to allow us to focus.



What helps to increase your state of alertness?

What helps you to calm down/ relax?

SOMETHING IN YOUR MOUTH (ORAL MOTOR INPUT):

- | | |
|---|--|
| <input type="checkbox"/> drink a milkshake | <input type="checkbox"/> chew gum, eat popcorn |
| <input type="checkbox"/> suck on hard candy | <input type="checkbox"/> crunch on nuts, pretzels or chips |
| <input type="checkbox"/> crunch or suck on ice pieces | <input type="checkbox"/> eat cut up vegetables |
| <input type="checkbox"/> tongue in cheek movements | <input type="checkbox"/> smoke cigarettes |
| <input type="checkbox"/> "chew" on pencil/pen | <input type="checkbox"/> eat chips and a spicy dip |
| <input type="checkbox"/> chew on coffee swizzle sticks | <input type="checkbox"/> bite on nails or cuticles |
| <input type="checkbox"/> Take slow deep breaths | <input type="checkbox"/> chew on buttons or collars |
| <input type="checkbox"/> Drink carbonated drink | <input type="checkbox"/> chew on sweatshirt strings |
| <input type="checkbox"/> Eat a cold popsicle | <input type="checkbox"/> whistle while you work |
| <input type="checkbox"/> Eat a pickle | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Suck, lick, bite on your lips or the inside of your cheeks | |
| <input type="checkbox"/> Drink coffee, caffeinated tea, hot cocoa or warm milk | |

MOVE (VESTIBULAR INPUT):

- | | |
|--|--|
| <input type="checkbox"/> Doodle while listening | <input type="checkbox"/> Extreme exercise (run, bike, etc) |
| <input type="checkbox"/> rock in a rocking chair | <input type="checkbox"/> Ride Bike |
| <input type="checkbox"/> shift or "squirm" in a chair | <input type="checkbox"/> Toe tap, heel or foot |
| <input type="checkbox"/> Push chair back on 2 legs | <input type="checkbox"/> Dance |
| <input type="checkbox"/> Aerobic exercise | <input type="checkbox"/> Tap pencil or pen |
| <input type="checkbox"/> Isometrics, lift weights | <input type="checkbox"/> Yard work |
| <input type="checkbox"/> Rock own body slightly | <input type="checkbox"/> Stretch |
| <input type="checkbox"/> Scrub kitchen floor | <input type="checkbox"/> Shake body parts |
| <input type="checkbox"/> Roll neck and head slowly | <input type="checkbox"/> Other |
| <input type="checkbox"/> Sit with crossed legs and bounce one slightly | |

TOUCH (TACTILE INPUT):

- | | |
|--|--|
| <input type="checkbox"/> Twist own hair | Fidget with the following |
| <input type="checkbox"/> Move keys or coins in pocket with your hand | <input type="checkbox"/> a straw |
| <input type="checkbox"/> Cool shower | <input type="checkbox"/> paper clips |
| <input type="checkbox"/> Warm bath | <input type="checkbox"/> cuticle or nails |
| <input type="checkbox"/> Receive a massage | <input type="checkbox"/> pencil or pen |
| <input type="checkbox"/> Pet a dog or cat | <input type="checkbox"/> earring or necklace |
| <input type="checkbox"/> Drum fingers or pencil on table | <input type="checkbox"/> keys while talking |
| <input type="checkbox"/> Rub gently on skin or clothes | <input type="checkbox"/> put fingers near mouth, eye, nose |

LOOK (VISUAL INPUT):

- Open window
- Watch a fire in fireplace
- Watch a fish tank
- Watch a sunset or sunrise
- Watch "oil and water" toys

LISTEN (AUDITORY INPUT):

- Listen to classical music
- Listen to Hard Rock
- Listen to others "hum"
- work in "quiet room"
- work in "noisy room"
- sing or talk to self

Sensory Integration

"The neurological process that organises sensations from the body and environment and makes it possible to use the body effectively" (Anna Jean Ayres, 1972)

- Sensory processing or sensory integration is necessary in order for us to effectively process a wide range of information from our senses.
- Our brains develop neural pathways as babies in response to sensory stimulation – repeated exposure creates strong pathways which promote healthy sensory integration
- Sensation is like healthy food for the brain. Every sensation nourishes the brain with information and the brain requires a variety of 'sensory food' to develop and function.





Sensory processing differences

- When the brain struggles to process, filter or use sensory input efficiently, this can result in the individual receiving confused, muddled or imprecise information about their body and their environment.
- Misinterpretation of sensory information can negatively impact on an individual- they can feel more tired, anxious frustrated or helpless. Can also impact on learning.
- Potential reasons for this: Neurological Conditions; Early Trauma; Genetic/Environmental factors

Experience of sensory processing overload



Over (hyper) Responsive –
Sensory avoiding

'It's Too Much'



Under (hypo) Responsive –
Sensory seeking

'I Need More'



What this might look like...

- She can't concentrate on any activity
- He avoids group time
- He'll only eat breadsticks or crisps
- He can't sit still – it's like his body isn't under his control
- She will only wear one type of t-shirt and all the labels need to come off
- He hides under the table or in the corner
- She bites other children
- Everything goes into his mouth
- He flaps his hands when he's excited or upset
- She bangs her head

A close-up photograph of a child's hands stacking colorful plastic blocks on a carpeted floor. The child is wearing a pink and white patterned long-sleeved shirt. The blocks are in various colors including yellow, blue, red, green, and orange. The background is slightly blurred, showing more blocks and a yellow surface. The text "What are some sensory behaviours you have observed in nursery?" is overlaid in white on the image.

What are some sensory behaviours you have observed in nursery?

Visual

**Hyper-responsive
(sensory avoiding)**

**Hypo-responsive
(sensory seeking)**

Irritated by bright
lights

Not noticing details
in books/the room

Distressed behaviour
in visually stimulating
environments

Difficulty finding
objects

Notices small details

Shows lack of
attention

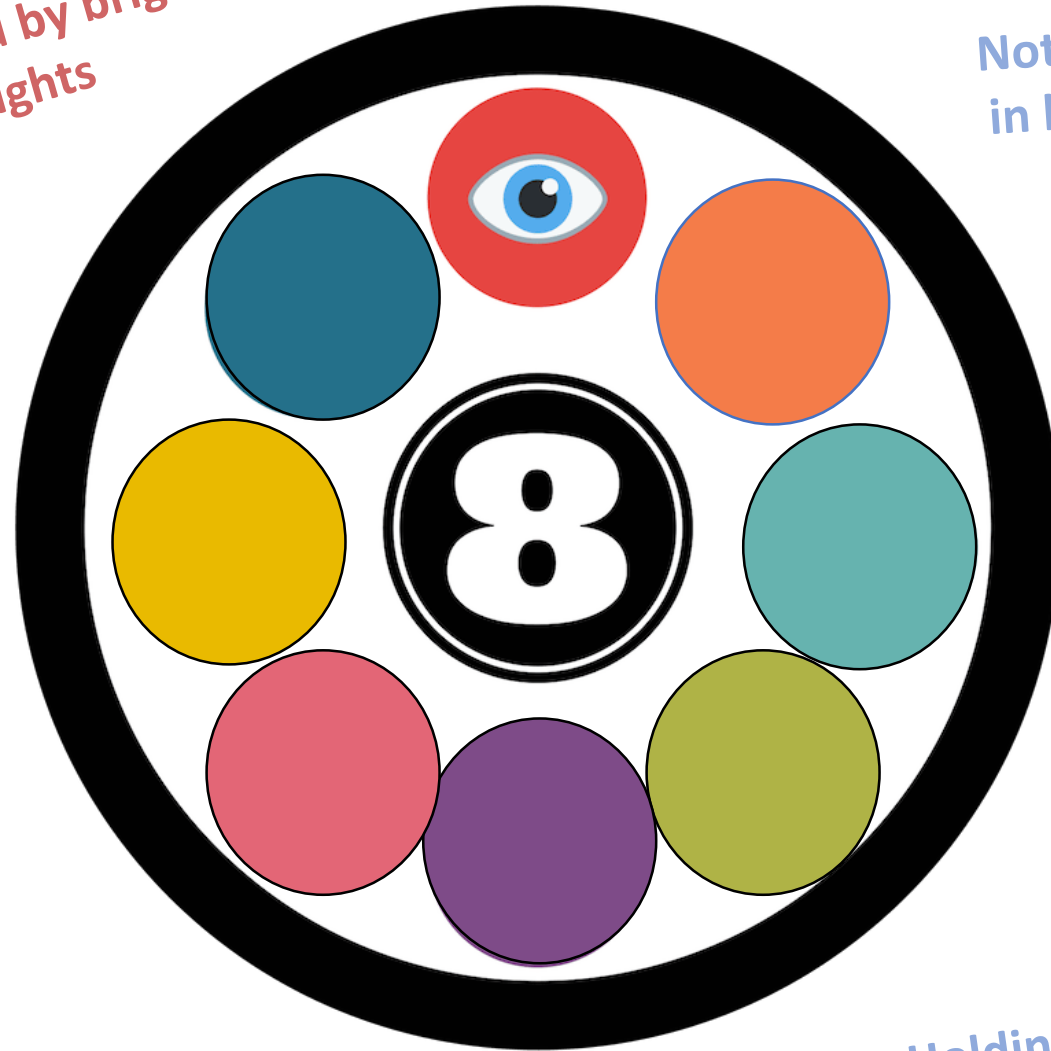
Very
distractable/limited
focus

Drawn to
bright/flashing/
spinning objects

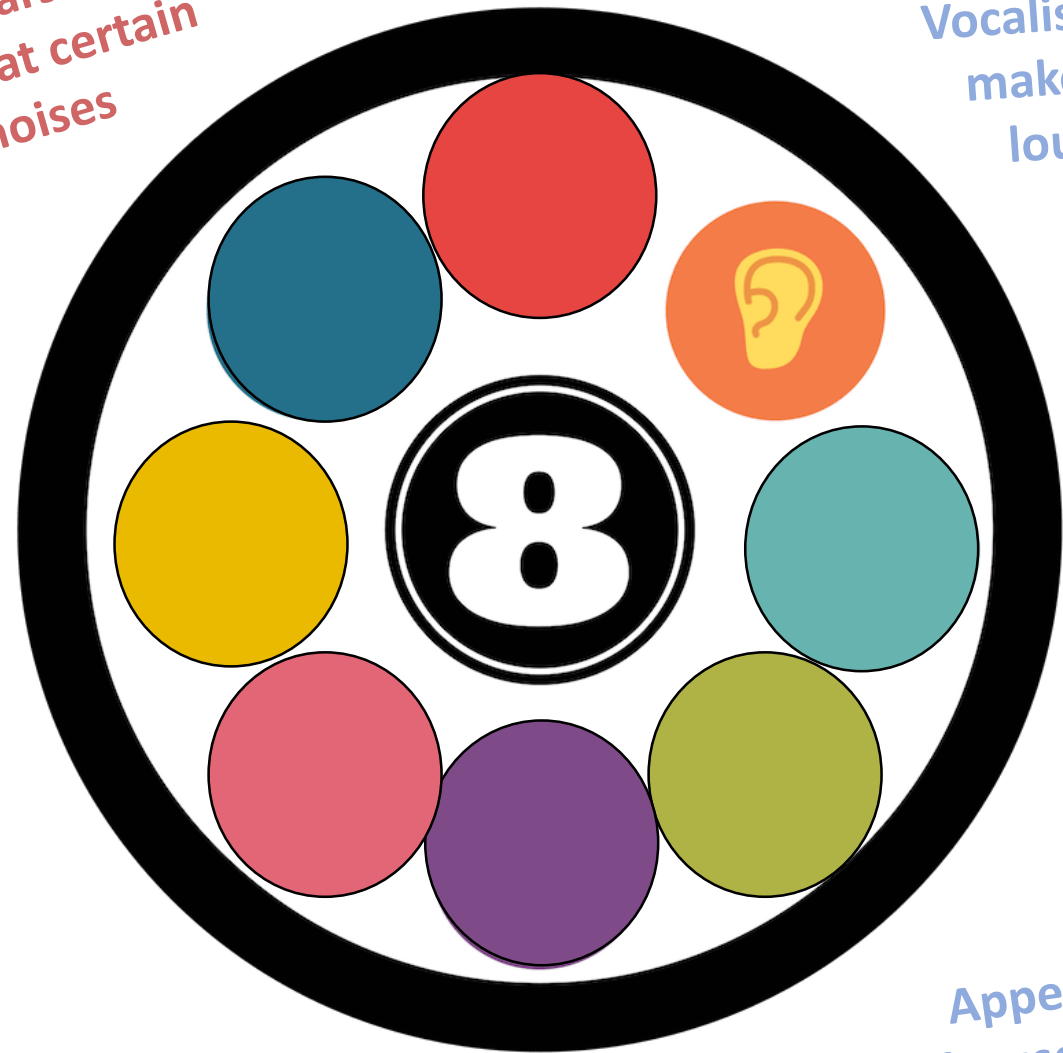
Avoids eye contact

Keeps head/eyes facing
down

Holding objects
close to eyes



Auditory



**Hyper-responsive
(sensory avoiding)**

Covers ears or gets
upset at certain
noises

Easily distracted by
noise in the
environment

Notices seemingly
quiet sounds

Very
distractible/limited
focus

Seeks out quiet spaces

**Hypo-responsive
(sensory seeking)**

Vocalises a lot and
makes random
loud noises

Seeks out a certain
sounds a lot of the
time

Doesn't appear to
react to louder
noises

Not noticing their
name getting called

Appears more
focused/alter in
noisy environments

Taste/Smell

**Hyper-responsive
(sensory avoiding)**

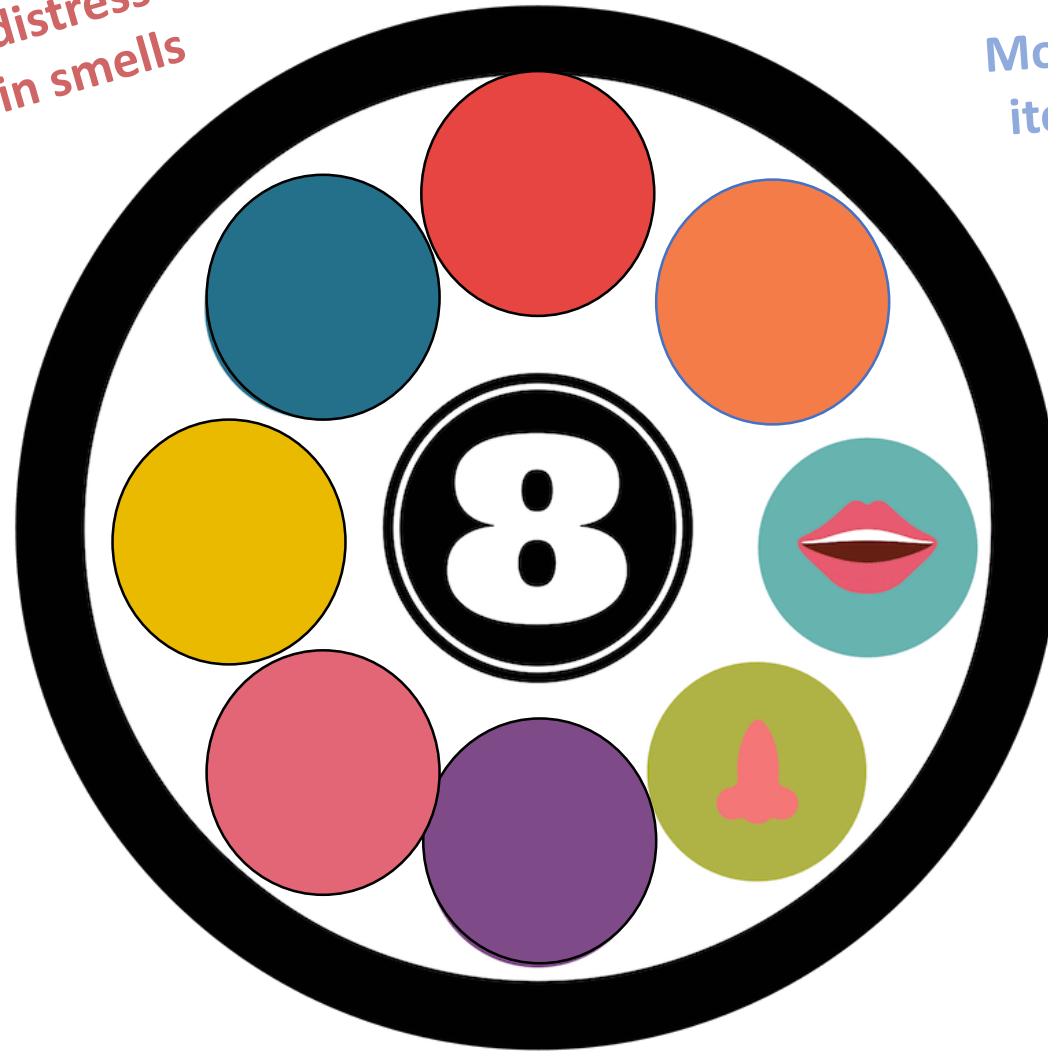
Shows distress at
certain smells

Avoids foods with
certain textures

Avoids certain tastes

Reluctant to try
new/unfamiliar food

Distracted by smells in
environment



**Hypo-responsive
(sensory seeking)**

Mouthing non-food
items- likes to lick
or taste them

Seeks out certain
smells/tastes

Drawn towards
strong flavours

Touch

**Hyper-responsive
(sensory avoiding)**

**Hypo-responsive
(sensory seeking)**

Avoids self-care
tasks like face wash
or hair cut

Has a very high
pain threshold

Sensitive to certain
textures of clothing

Doesn't notice
when hair or
clothes are messy

Has a very low pain
threshold – high
distress

Poor fine motor
skills/weak grip

Avoidance of touch

Seeks out messy
play/rough and
tumble more than
most

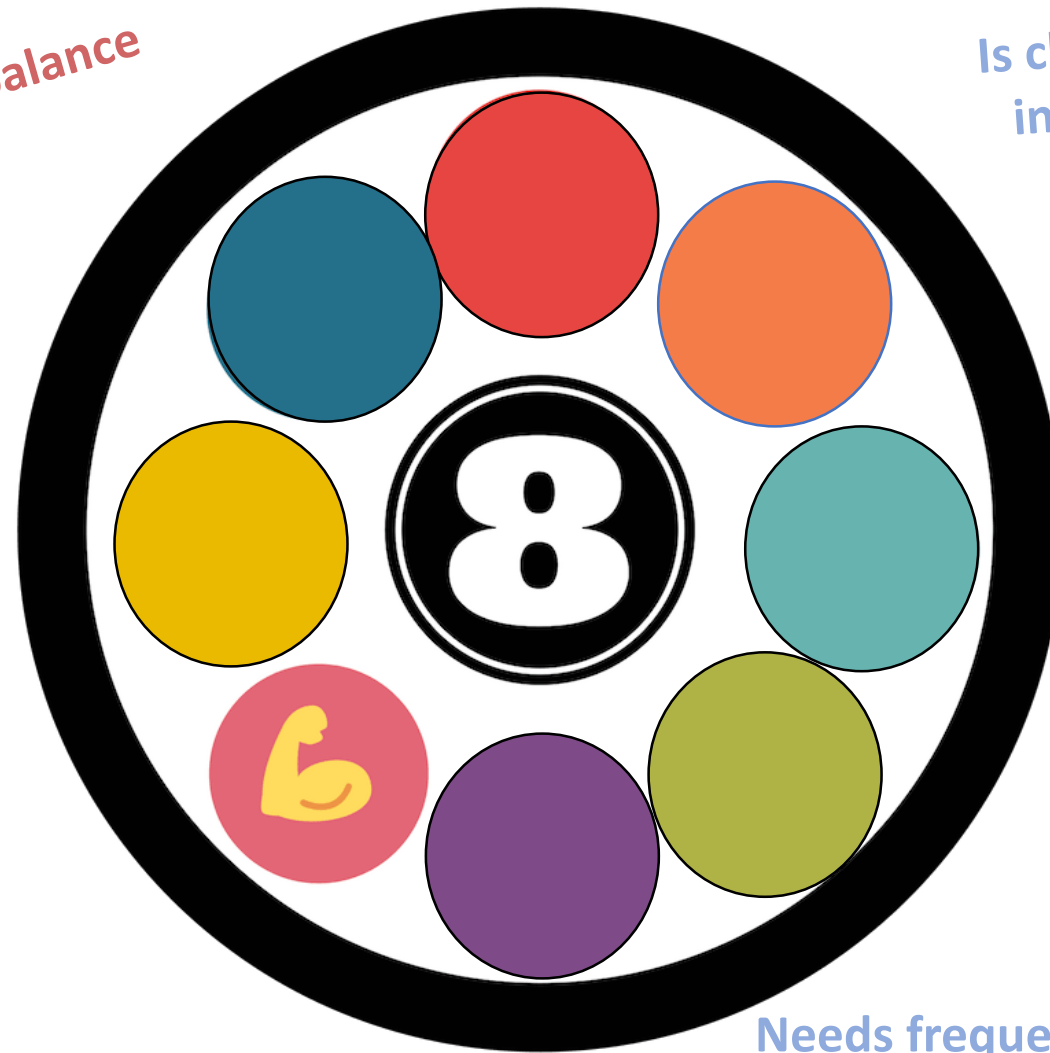
Avoiding
messy/sensory play

Dislikes walking
barefoot

Very tactile- likes
lots of hugs



Proprioception (body awareness)



**Hyper-responsive
(sensory avoiding)**

Very good balance

**Anxious/cautious of
movement activities**

**Dislike of others close
to them**

**Avoids deep
pressure/enclosure**

**Difficulties with fine
motor tasks (e.g.
buttons)**

**Hypo-responsive
(sensory seeking)**

**Is clumsy and walks
into objects a lot**

**Chews on objects,
toys, clothing or
may bite**

**Often spills drinks
or drops food when
eating**

**Holds objects very
tightly**

**Doesn't know their
own strength**

**Needs frequent
opportunities to move
or run**

**Likes deep
pressure/tight
enclosure**

Vestibular (balance)

**Hyper-responsive
(sensory avoiding)**

**Hypo-responsive
(sensory seeking)**

Fearful of
movement

Dislike of
escalators/lifts

Poor balance

May get travel sick

Seeks out
movement (like
rocking, swinging)

Dislikes head being
tilted back (e.g. hair
washing, rough play)

Avoids gross motor
activities

Needs movement
to focus (swinging
on chair)

Dislikes swings/round
abouts

Often spins and
twirls



Interoception (how we feel)

Difficulties
processing internal
signals such as....

Can lead to....

Hunger

Thirst

Temperature

Toileting

Pain

Nervous system
responses




A lack of
understanding/
awareness of
body signals

Stress responses
(fight/flight/freeze)

Emotional
dysregulation

Emotional
awareness



How do we know if there's a
sensory need and what
should we do?

Assessing Sensory Needs



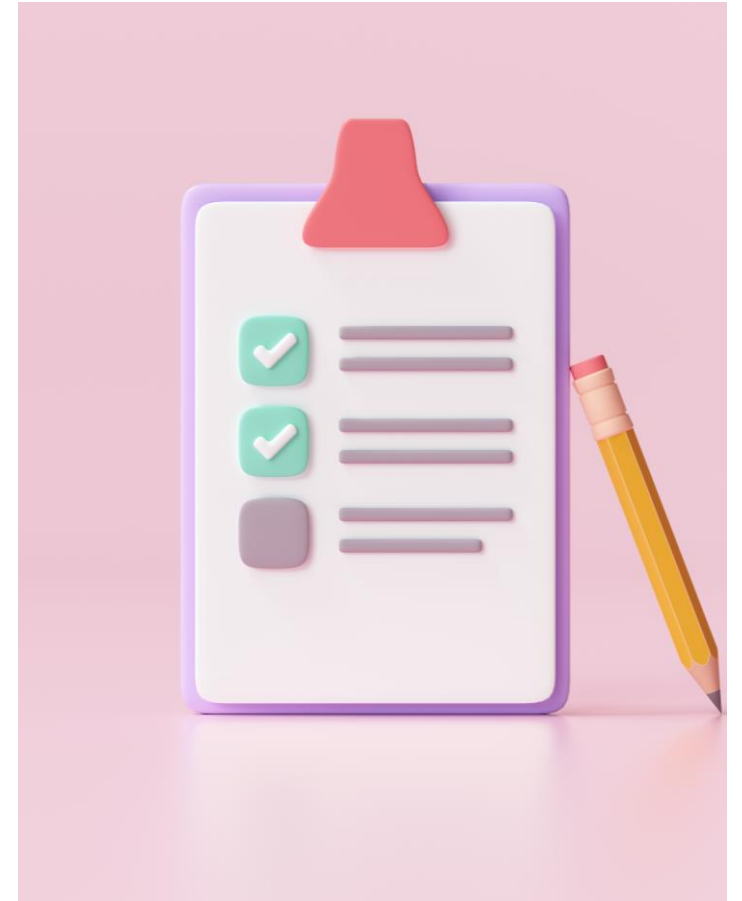
What is the function of the behaviour?



What are the patterns?



When is the behaviour NOT there?



Assessment Tools: ABC Tracker

Purpose: Exploring patterns of behaviour to better understand influencing factors.

- **Who** is present when the problem occurs?
- **When** does the problem behaviour occur?
- **Where** does the problem behaviour take place?

ABC Recording Chart

Date/Time	Activity	Antecedent	Behaviour	Consequence
When did the target behaviour occur	What was child doing beforehand	What happened right before the behaviour that <u>may</u> have triggered the behaviour	What did the behaviour look like? Only detail physical actions you can see	What happened <u>directly</u> after the behaviour, how did you respond, what did the child obtain or avoid

Assessment Tools: Motivational Assessment Scale



Sensory



Is the behaviour meeting a sensory need?



Escape



Is the behaviour an attempt to get away from or stop a situation?



Attention



Is the behaviour a need for attention?



Tangible



Is the behaviour trying to access something physical (e.g. food?)

Assessment Tools: Sensory Check Lists

Does the child exhibit difficulties in the following areas compared to same age peers?	Yes frequently	Sometimes	No never
Gross Motor Skills			
Seems lethargic or tires easily			
Difficulty hopping, jumping, skipping or running			
Appears stiff or awkward in movements			
Clumsy, seems not to know how to move body, bumps into things			
Confuses left and right			
Hesitant in climbing or playing on playground equipment			
Reluctant to participate in sports or physical activity			
Seems to have difficulty learning new motor tasks			
Struggles with rhythmic activities e.g. clapping, drumming			
Fine Motor Skills			
Poor posture when sitting – slumps, leans on arm, head close to work, doesn't use non-dominant hand to hold work			
Difficulty or avoidance of drawing, colouring, copying, cutting			
Weak pencil grip, drops pencil often, pencil lines faint or wobbly			
Tight pencil grip or fist grip, breaks pencil frequently, pencil lines dark			
Difficulty with dressing, buttons, zips, tying shoe laces			
Touch			
Seems overly sensitive to being touched, pulls away from light touch			
Has trouble keeping hands to self, will poke or push others			
Touches things constantly, seems to explore objects through touch			

Sensory System	Behaviours	Yes	No	Unsure (Add any comments)
Visual	Likes to be in the dark <i>Hypersensitive</i>			
Visual	Struggles to find things set in a busy background <i>Hypersensitive</i>			
Visual	Likes spinning visual objects <i>Hyposensitive</i>			
Visual	Stares for long period of time at a visual object <i>Hypersensitive</i>			
Visual	Is distracted from an activity by visual stimuli – e.g., by things on the walls, by the light coming through the blinds <i>Hyposensitive</i>			
Visual	Turns away from lights, or from the sun coming through the window <i>Hypersensitive</i>			
Taste/smell	Winces or shows distress at certain smells <i>Hypersensitive</i>			

Home

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Kids Home



CHILD DEVELOPMENT



LIFE SKILLS



HEALTH A-Z



RESOURCES



MORE

Interactive Child Development Questionnaires

These questionnaires help you to find activities and strategies to support your child. Download the questionnaires to use at home or in the classroom.

Assessment Tools:
NHS KIDS
Questionnaire

- Free online resource for parents and educators
- Short questionnaire for each sense
- Advice and information specific to the sensory need

Example of Questionnaire Results



Sense of Vision (2-5 Years)

Question 1: Does your child like to look at spinning/moving objects such as washing machines, wheels, fans etc? Does your child spin or flick objects in front of their eyes?



Strategies and Suggestions

Whilst children can use spinning objects as a form of visual stimulation, your sense of vision and your sense of movement (vestibular system) work together that because your child spins things in front of their eyes the following strategies to see if they help:

- Watching spinning things can be almost hypnotic toys for time limited periods regularly throughout the day and other visually stimulating toys that you can use.
- Introduce spinning items outside such as windmills, encourage your child to play outdoors.



- Use movement to see if this decreases your child's need to fixate on spinning objects. Use a spinning chair or a "sit'n'spin" to enable your child to achieve the same sensory input in a different fashion.
- Some children find holding their toys closely to their eye helps them to filter out any irrelevant information and focus on what is important to them.

Strategies and Suggestions

Rapidly moving images are visually very stimulating, and can become quite addictive! Hence the reason older children like to spend lots of time in front of computer screens. Children tend to become absorbed in TV programmes, and can also often be observed viewing them from odd angles e.g. lying upside down on the sofa, or on their side on the floor which changes the visual stimulus received.

It is important to keep the amount of time your child spends in front of a screen limited to about an hour each day (easier said than done, we know, if it gives you the chance to make dinner or grab a shower) as we don't yet understand the long term implications of too much of this type of visual stimulus on the child's developing brain.

- Try to encourage your child to take part in more active pursuits such as rough and tumble games, and outdoor based activities.
- Avoid strobe lighting, especially those that flicker, as this can have a similar effect on your child's brain as watching a highly pixelated screen.
- Create a visual sensory box (for more information on creating a sensory box visit www.nhs.uk/guidance/qa/2013/04/24/052123main) and allow your child to access this for time limited periods throughout the day. Use a clock or timer to limit the amount of time your child gets to spend in this activity. You may find the use of a visual timetable or picture cards can help you support introducing this as part of your child's daily routine.



Activity

- Think of a child in your setting who could be affected by sensory needs.
- Complete the following table and discuss with the people next to you

What is the behaviour?	When do you notice it most? When are the exceptions?	Potential contributing factors?	What sensory system(s) could be involved?	Sensory seeking or avoiding (or a combination?)
<i>E.g. hair pulling; biting other children; climbing; not eating</i>	<i>E.g. every morning; during group time When do you not see the behaviour?</i>	<i>E.g. who is involved; what is the environment like; what time of day; past/early experiences?</i>	<i>Visual; taste; smell; touch; hearing; proprioception; vestibular; interoception.</i>	<i>Hyper-sensitive Hypo-sensitive</i>

A photograph of a child swinging on a swing set at a playground during sunset. The child is in mid-air, wearing a pink long-sleeved shirt and dark pants. The background shows a grassy field, trees, and a building under a warm, orange sky. The text "Planning an early years environment to meet different sensory needs" is overlaid in white, centered on the image.

Planning an early years
environment to meet
different sensory needs



Responding to sensory needs

Key messages

- Providing opportunities to experience/develop the sensation
- Gradual exposure to increase threshold
- Finding a safe alternative



Supporting auditory needs



Hyper-sensitivity (sensory avoiding)

- Ear defenders
- Participation from a distance
- Consider reducing environmental sounds
- Readily available quiet spaces
- Consider your communication with child-tone, volume, amount of information.

Hypo-sensitivity (sensory seeking)

- Provide different auditory experiences (music, recordings of different sounds etc)
- Be at child's level, gentle touch, use their name to gain attention first.
- Use exaggerated expression and higher tone

Activity Ideas

- Play games which involve identifying sounds, to help reassure the child and support them in becoming familiar with the sounds
- Walk towards and around the sound source to see and understand where it comes from and to reassure the child that there is no danger.
- Plan opportunities for gentle exposure to busy environments to retrieve child motivated objects, e.g. a visit to the hall to get some food.
- Encourage the child to play with the objects that make a noise or watch the adult play with them. Make the activity fun, e.g. blow a balloon up and let it go or release a small squeaky bit of air out, allowing the child to have control where appropriate.



Supporting taste and smell



Hyper-sensitivity (sensory avoiding)

- Be mindful of perfume/hand cream/room spray
- Calm atmosphere for lunch/snack time
- Encourage child to smell and touch food, use positive language around food.
- Try to keep kitchen doors closed and windows open when cooking (if possible)

Hypo-sensitivity (sensory seeking)

- Highlight alternative ways to identify people and toys (not just through mouth).
- Audit the environment to ensure it's as safe as possible
- Model exploration of toys with hands rather than mouth
- Try to provide alternative 'food' items to bite-similar texture/colour
- Chewlery
- Plan activities that provide oral sensory feedback

SENSE OF SMELL



Activity Ideas: Smell and Taste



Supporting tactile needs



Hyper-sensitivity (sensory avoiding)

- Give children warning pre touch and always approach from front
- Give time to accept and try tactile activities
- Provide long handed tools for activities (e.g. long paint brushes)
- Introduce new touch to back of hand rather than palm (less sensitive)
- Don't force involvement in activities that require touching

Hypo-sensitivity (sensory seeking)

- Introduce different variations of touch (light and firm) to help recognise different sensations
- Weighted blankets/toys/touching their shoulders for times of focus
- Cushions and soft toys to cuddle tightly
- Squeezy toys likes stress balls

Activity Ideas: Touch



Supporting visual needs



Hyper-sensitivity (sensory avoiding)

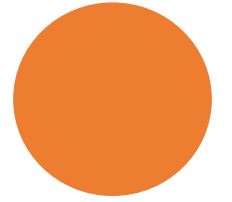
- Have distraction free zones for play
- Avoid making environments too visually busy
- Consider the pictures/illustrations in books
- Consider matt lamination pouches (reduce reflection)
- Don't enforce eye contact

Hypo-sensitivity (sensory seeking)

- Use visual cues and gesture to support understanding and engagement
- Opportunities for flashing/spinning toys
- Sensory rooms with different light options

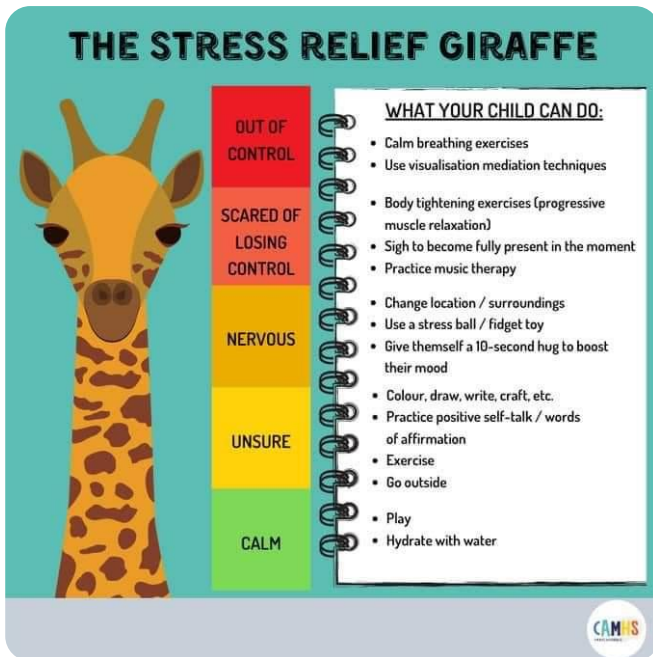
Supporting Vestibular Needs

- Teach the child to use their feet to activate equipment and to become in control, e.g. swinging self on a swing, pushing self along on a Scuttle bug.
- Play games where spinning is part of the fun, e.g. 'Ring a roses' and 'Pin the tail on the donkey'.
- Sing songs and share interactive books with actions that involve swirling around.
- If possible, provide a trampoline or trampette for bouncing on.



Supporting Proprioception





Supporting Interoception

- Regular opportunities for extended exercise or heavy work- draw child's attention to their body sensations (e.g. heart rate, breathing, temperature).
- Yoga- focuses on listening to your body and encourages children to slow down and pay attention.
- 'Noticing' activities
- Activities to explore differences of temperature (e.g. hot and cold water)
- Visual prompts for toileting, eating and drinking.
- Social stories can help to talk about concepts that may be hard for the child to understand and remember.

Activity

- Return to your table, and now think what supports you could put in place for this child. Complete and discuss with the people next to you.

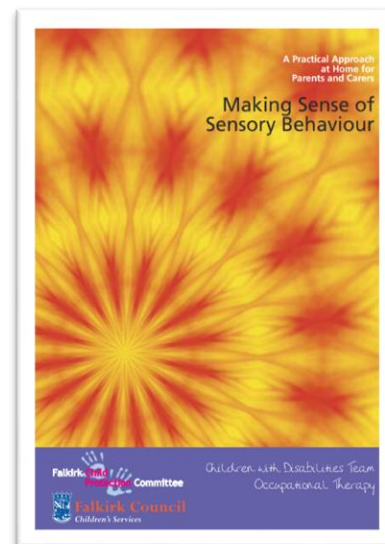
What is the behaviour?	When do you notice it most? When are the exceptions?	Potential contributing factors?	What sensory system(s) could be involved?	Sensory seeking or avoiding (or a combination?)	What support could you give them?
<i>E.g. hair pulling; biting other children; climbing; not eating</i>	<i>E.g. every morning; during group time When do you not see the behaviour?</i>	<i>E.g. who is involved; what is the environment like; what time of day; past/early experiences?</i>	<i>Visual; taste; smell; touch; hearing; proprioception; vestibular; interoception.</i>	<i>Hyper-sensitive Hypo-sensitive</i>	<i>E.g. adaptations to the environment; proactive activities; gradual exposure etc.</i>

Useful links and resources

Understanding and supporting sensory processing in an education context

HOME WHAT IS SENSORY PROCESSING? SENSORY PROCESSING NEEDS IDENTIFYING SENSORY PROCESSING NEEDS
STRATEGIES AND ADAPTATIONS TO SUPPORT SENSORY PROCESSING NEEDS SENSORY CIRCUITS ACTIVITIES
FURTHER READING AND ACTIVITY IDEAS FEEDBACK

SENSORY PROCESSING



NHS Greater Glasgow and Clyde

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Sense of Vision

Child's first name

Child's date of birth

Was your child born prematurely?

We use our vision to interpret information from all we see around us. Some children use their vision differently and can either be more sensitive to visual input (e.g. avoiding bright lights) or less sensitive (e.g. appearing not to see something right in front of them). If you suspect your child does not process visual information as well as they


Does the child exhibit difficulties in the following areas compared to same age peers?	Yes frequently	Sometimes	No never
Gross Motor Skills			
Seems lethargic or tires easily			
Difficulty hopping, jumping, skipping or running			
Appears stiff or awkward in movements			
Clumsy, seems not to know how to move body, bumps into things			
Confuses left and right			
Hesitant in climbing or playing on playground equipment			
Reluctant to participate in sports or physical activity			
Seems to have difficulty learning new motor tasks			
Struggles with rhythmic activities e.g. clapping, drumming			
Fine Motor Skills			
Poor posture when sitting – slumps, leans on arm, head close to work, doesn't use non-dominant hand to hold work			
Difficulty or avoidance of drawing, colouring, copying, cutting			
Weak pencil grip, drops pencil often, pencil lines faint or wobbly			
Tight pencil grip or fist grip, breaks pencil frequently, pencil lines dark			
Difficulty with dressing, buttons, zips, tying shoe laces			
Touch			
Seems overly sensitive to being touched, pulls away from light touch			
Has trouble keeping hands to self, will poke or push others			
Touches things constantly, seems to explore objects through touch			

Discussion

What do we do well in our setting?



What is one thing I've learned from today about understanding and supporting sensory needs in early years?



What is one thing I am going to try to develop in my own practice in relation to supporting sensory needs?

References

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- Miller, L. J., Nielsen, D. M., Schoen, S. A., & Brett-Green, B. A. (2009). Perspectives on sensory processing disorder: a call for translational research. *Frontiers in Integrative Neuroscience*, 3(22), 1-12.
- Yack, E., Sutton, S., & Aquilla, P. (2002). *Building bridges through sensory integration*. Future Horizons.
- <https://childmind.org/article/sensory-processing-issues-explained/>
- <https://uktraumacouncil.org/resource/early-childhood-and-the-developing-brain?cn-reloaded=1>
- <https://www.cumbria.gov.uk/elibrary/Content/Internet/537/1459/7037/18016/4450511357.pdf>
- <https://www.nhsggc.org.uk/kids/child-development/interactive-child-development-questionnaires/>
- <https://www.nhsggc.org.uk/kids/life-skills/joining-in-with-sensory-differences/>
- <https://www.falkirk.gov.uk/services/social-care/disabilities/docs/young-people/Making%20Sense%20of%20Sensory%20Behaviour.pdf?v=201906271131>



Thank you for listening.
