

Understanding sensory processing and strategies

Adult ASD Service



Autistic people may experience sensory processing differences. If you are autistic, you may be over-sensitive or under-sensitive to sights, sounds, tastes, textures and smells. These differences can be positive and a strength however, sometimes they can also cause distress or discomfort.

In this presentation we will talk about what sensory processing is, examples of sensory differences and discuss strategies that can help.

What is sensory processing?

- Sensory processing is how the brain takes in information through our senses and interprets this information about the body and the environment around us. This is then used to control and organise the body.
- We all receive information in individual ways through our senses and this enables us to respond to produce an action or a behaviour.



THE SEVEN SENSORY SYSTEMS

PROPRIOCEPTION



VESTIBULAR



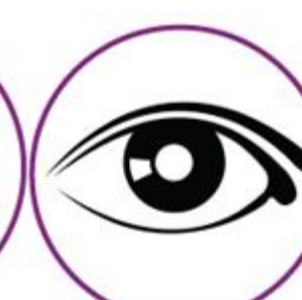
TACTILE



AUDITORY



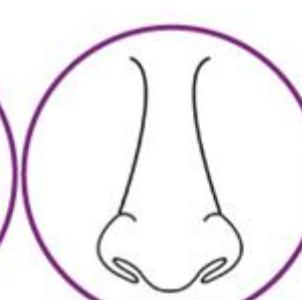
VISUAL



GUSTATORY



OLFACTORY



The eighth sense: Interoception

Interoception is a lesser-known sense that helps you understand and feel what's going on inside your body.

People who have difficulties with interoception may find it tricky to recognise when they feel hungry, full, hot, cold, or thirsty. They may also find it hard to recognise and regulate their emotions.



When can sensory processing become a problem?

- A person with autism and sensory processing difficulties may get too much or not enough stimulation from their environment. This can become a problem when sensory experiences and resulting behaviours stop people from participating in everyday activities and inhibit their ability to regulate their emotions. These experiences can lead to people feeling overwhelmed and people can experience sensory overload. Sensory overload can cause anxiety, stress, pain, behavioural outburst, meltdowns or shutdowns.



How sensory overload can impact an autistic person

Sensory overload can impact an autistic person and their ability to carry out everyday tasks. A person may feel very overwhelmed when engaging in tasks such as visiting the supermarket, using public transport or attending work and education. This can be due to the sensory experiences in that environment. In a supermarket there may be music in the background, someone talking on a tannoy, customers talking, tills beeping, food smells and harsh lighting. All of these things combined can be very overwhelming to take in and process all at once. These experiences can lead to people avoiding situations, becoming isolated and anxious.

There are many ways that sensory overload can be avoided through learning about our own sensory preferences and adapting the environment around us.

<https://www.youtube.com/watch?v=K2P4Ed6G3gw>

This video is good for supporters to watch to gain an insight on sensory overload, but can be too intense for some people with autism

Considerations on how to support someone that experiences sensory overload

If you are having a meltdown, or not responding there are things that you can do to help. Often, small changes to the environment can make a difference. Keeping a diary or log of your meltdowns and thinking about what happened before, during and after can be helpful in recognising how and when you may be experiencing sensory overload and can be helpful in highlighting strategies.

Three points to remember are:

- 1. Be aware.** Look at the environment to see if it is creating difficulties. Can you change anything?
- 2. Be creative.** Think of some positive sensory experiences that you enjoy and can incorporate into your day to day life.
- 3. Be prepared.** Research in advance about possible sensory stimuli that you may experience in different environments. (NAS 2021).

Some other things to consider are; having access to a lower stimulus space, having time to process information, access to a safe space to calm down and rest after experiencing a meltdown or shut down. A lot of people will feel exhaustion afterwards and will benefit from this time to rest and recover.

Resources that can be used to communicate sensory needs

- **Autism alert card**

This card is a great way for people to let the public know they are autistic and that they may need some extra time or help in certain situations. Download the I Am Autistic Card for free, here: [I am autistic card \(autism.org.uk\)](https://www.autism.org.uk/autism-information/i-am-autistic-card). You can also get an autism alert card from Amazon or Ebay and CHAPS: <https://www.cheshireautism.org.uk/news/attention-card/>. The CHAPS alert card is linked with Merseyside and Cheshire emergency services.



Other examples of resources include:

- Hidden disabilities lanyard scheme

<https://hiddendisabilitiesstore.com/shop.html>

- Hospital passport

<https://www.autism.org.uk/advice-and-guidance/topics/physical-health/my-health-passport>



Hospital passport

My Hospital Passport

For people on the autism spectrum



Hospital staff, please consult this passport before you assess me or carry out any interventions.

Please keep this passport with my notes at the end of my bed and return to me when I am discharged.

Personal information

Name:

I like to be called:

Date of birth:

NHS number:

If I am admitted to hospital there are matters that will need to be dealt with urgently.

Please assist me by contacting:

Name:

Relationship:

Phone number:

Other people I would like you to contact in connection with my treatment and care:

Name: Relationship: Phone:

Name: Relationship: Phone:

Name: Relationship: Phone:

Some autistic people find going to medical appointments or hospital overwhelming. A hospital passport is a helpful tool to help communicate your needs and takes into consideration sensory processing difficulties such as interoception.

How I would like you to communicate with me:



How I communicate:



Please do not assume there is nothing wrong with me if I don't express pain the in the same way.



How I experience pain:



How I communicate pain:

Understanding and learning how we process sensory information as individuals

Our bodies are like a car engine. Sometimes you may feel like your body is running in.....



High speed



Low speed



Just right

Understanding how we process sensory information can help us to identify helpful strategies



When your engine is high speed you may find it difficult to pay attention, to sit still, quietly and get your work completed.

When your engine is low speed you also may find it difficult to concentrate, you may daydream easily.



When you are in the “just right” place, its usually easier to pay attention, to get your work done.

If you want to change your engine speed from high or low to get into the “just right” feeling- you may need to try different things.....

Appendices

Sight

UNDER-SENSITIVE

- Objects appear quite dark, or lose some of their features
- Central vision is blurred but peripheral vision quite sharp
- A central object is magnified but things on the periphery are blurred
- Poor depth perception, difficulties with throwing and catching, clumsiness.

OVER-SENSITIVE

- Distorted vision - objects and bright lights can appear to jump around
- Images may fragment
- Easier and more pleasurable to focus on a detail rather than the whole object
- Has difficulty getting to sleep as sensitive to the light.

Strategies:

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

Sound

UNDER-SENSITIVE

- may only hear sounds in one ear, the other ear having only partial hearing or none at all
- may not acknowledge particular sounds
- might enjoy crowded, noisy places or bang doors and objects.
- You could help by using visual supports to back up verbal information, and ensuring that other people are aware of the under-sensitivity so that they can communicate effectively. To meet the person's individual sensory need, include experiences they enjoy in their daily timetable.

OVER-SENSITIVE

- noise can be magnified and sounds become distorted and muddled
- may be able to hear conversations in the distance
- inability to cut out sounds – notably background noise - leading to difficulties concentrating.

Strategies:

- shutting doors and windows to reduce external sounds
- preparing the person before going to noisy or crowded places
- providing ear plugs and music to listen to
- creating a screened workstation in the classroom or office, positioning the person away from doors and windows.

Smell

UNDER-SENSITIVE

- some people have no sense of smell and fail to notice extreme odours (this can include their own body odour, bad food smells or gas).
- some people may lick things to get a better sense of what they are.
- You could help by creating a routine around regular washing and using strong-smelling products to distract people from inappropriate strong-smelling stimuli.

OVER-SENSITIVE

- smells can be intense and overpowering. This can cause toileting problems
- dislikes people with distinctive perfumes, shampoos, etc.

Strategies:

Unscented detergents or shampoos, avoiding wearing perfume, and making the environment as fragrance-free as possible. Some people find certain smells calming so providing them with a sensory kit with their favourite scented candle, perfume or toiletries can be a helpful strategy in feeling calmer and reducing the speed of their 'engine.'

Taste

UNDER-SENSITIVE

- likes very spicy foods
- eats or mouths non-edible items such as stones, dirt, soil, grass, metal, faeces. This is known as pica.

OVER-SENSITIVE

- finds some flavours and foods too strong and overpowering because of very sensitive taste buds.
Has a restricted diet
- certain textures cause discomfort - may only eat smooth foods like mashed potatoes or ice-cream.

Strategies:

- Working with a persons preferences to ensure they get a varied diet.
- Some people eat really sour foods or sweets to increase the rate of their 'engine'.
- Some people may limit themselves to bland foods or crave very strong-tasting food. As long as someone has some dietary variety, this isn't necessarily a problem.

Touch

UNDER SENSITIVE:

- Holds others tightly
- Has a high pain threshold.
- May be unable to feel food in the mouth – food could be left around face / messy eater.
- Likes to chew objects

OVER SENSITIVE:

- Touch can be painful and uncomfortable - people may not like to be touched and this can affect their relationships with others.
- Dislike having anything on hands or feet.
- May remove labels in clothing.
- May find some food or material textures uncomfortable.
- Particular about the way clothes or shoes feel.

Strategies:

- warning prior to being touched, and approach from the front so its predictable.
- remembering that a hug may be painful rather than comforting. Agree a hug, at a calm time.
- Working with clothing / food preferences.
- gradually introducing different textures of touch, eg have a box of materials available that are tolerated – feathers, calming massage oils, warm stones etc.
- Eat in front of a mirror or wash / check face after eating, or use a napkin.
- Be aware of how tightly you hold people.
- for chewing, - chewing gum, or crunchy foods (raw granola, raw carrots etc).

Vestibular (Balance)

UNDER-SENSITIVE

- a need to rock, swing or spin to get some sensory input.
- You could encourage activities that help to develop the vestibular system. This could include using rocking horses, swings, roundabouts, seesaws, catching a ball or practising walking smoothly up steps or curbs.

OVER-SENSITIVE

- difficulties with activities like sport, where we need to control our movements
- difficulties stopping quickly or during an activity
- car sickness
- difficulties with activities where the head is not upright or feet are off the ground.

Strategies:

- breaking down activities into small, more easily manageable steps and using visual cues such as a finish line.
- Using technology as an alternative (Nintendo Wii)
- Do movement activities, such as swinging, ball games, running, trampolining, swimming etc, at appropriate times of the day.

Proprioception (Movement and body in space)

UNDER-SENSITIVE

- stands too close to others, because they cannot measure their proximity to other people and judge personal space
- finds it hard to navigate rooms and avoid obstructions
- may bump into people.

Strategies:

- positioning furniture around the edge of a room to make navigation easier
- using weighted blankets to provide deep pressure
- putting coloured tape on the floor to indicate boundaries
- using the 'arm's-length rule' to judge personal space - this means standing an arm's length away from other people.

OVER-SENSITIVE

- difficulties with fine motor skills, eg manipulating small objects like buttons or shoe laces
- moves whole body to look at something.

Strategies:

- offering 'fine motor' activities like lacing boards.
- Wii fit balance board and yoga pose activities, pilates, riding a bike, swimming, trampolining.

Interoception

UNDER-SENSITIVE:

- Struggles to feel or recognise emotions
- Does not always feel when they are hungry, thirsty, tired or full so may over or under eat, may struggle with sleep

OVER-SENSITIVE:

- Can notice and remember small details associated with feeling of emotion, pain, temperature, hunger or thirst
- Unusual ability to notice small internal changes (e.g. digestion of food, changes in heart rate, etc)
- You may show signs of distress when you are hungry, thirsty, hot/cold or tired.
- Can feel overwhelmed by experiencing multiple sensations at one time and not able to differentiate what they are.

Strategies:

- Completing a hospital passport to enable healthcare staff to recognise how you communicate pain and temperature. If you struggle to communicate when you are in pain you can include information about how you might behave if you are in pain such as; become socially withdrawn, sleep, cry, scream, shout, so healthcare staff or people close to you know what to look out for.
- Use communication passports or communication cards to support you to express how you are feeling if you struggle to verbalise this yourself.
- Use visual timetables and timers to remind you to stop eating and drinking if you struggle to feel full. You can use these strategies to meal plan accordingly if you feel hunger a lot more than usual.
- Use visual portion control plates to indicate how much food to put on your plate.
- Mindfulness helps us to tune into our bodies and recognise how we are feeling
- Establishing a structured routine.
- Developing a 'sensory diet' to help you to recognise how you are feeling and to help keep yourself regulated.

This can help us to identify things to help raise or lower your alertness

A similar checklist can be found here –

<http://f-sepac.org/wp-content/uploads/2015/01/Sensory-Motor-Preference-checklist.pdf>

Sensory-Motor Preference Checklist (For Adults)

Directions: This checklist can help adults recognize in what ways we rev up or settle ourselves, our bodies and alertness. Mark the items that you use to increase (↑) or to decrease (↓) your alertness. You might mark both (↑↓) on some items. Others you might not use at all.

Put Something In Your Mouth (Oral Motor Input):

Drink a milkshake	Chew gum
Suck on hard candy	Crunch on nuts/pretzels/chips
Crunch or suck on ice pieces	Bite on nails/cuticle
Tongue in cheek movements	Eat popcorn/Cut up vegetable
Chew on pencil/pen	Eat chips and a spicy dip
Chew on coffee swizzle sticks	Smoke cigarettes
Take slow deep breaths	Eat on buttons/sweatshirt strings
Drink a carbonated drink	Whistle while you work
Eat a cold popsicle	Drink coffee/tea (caffeinated)
Eat a pickle	Drink hot cocoa or warm milk
Suck, lick, bite on your lips or the inside of your cheeks	Other:

Move (Vestibular & Proprioceptive Input):

Rock in a rocking chair	Stretch/shake body parts
Shift or "squirm" in a chair	Run/jog
Push chair back on 2 legs	Ride bike
Aerobic exercise	Tap toe, heel or foot
Isometrics/lift weights	Dance
Rock own body slightly	Tap pencil/pen
Scrub kitchen floor	Yard work
Roll neck and head slowly	
Sit with crossed legs and bounce one slightly	Other:

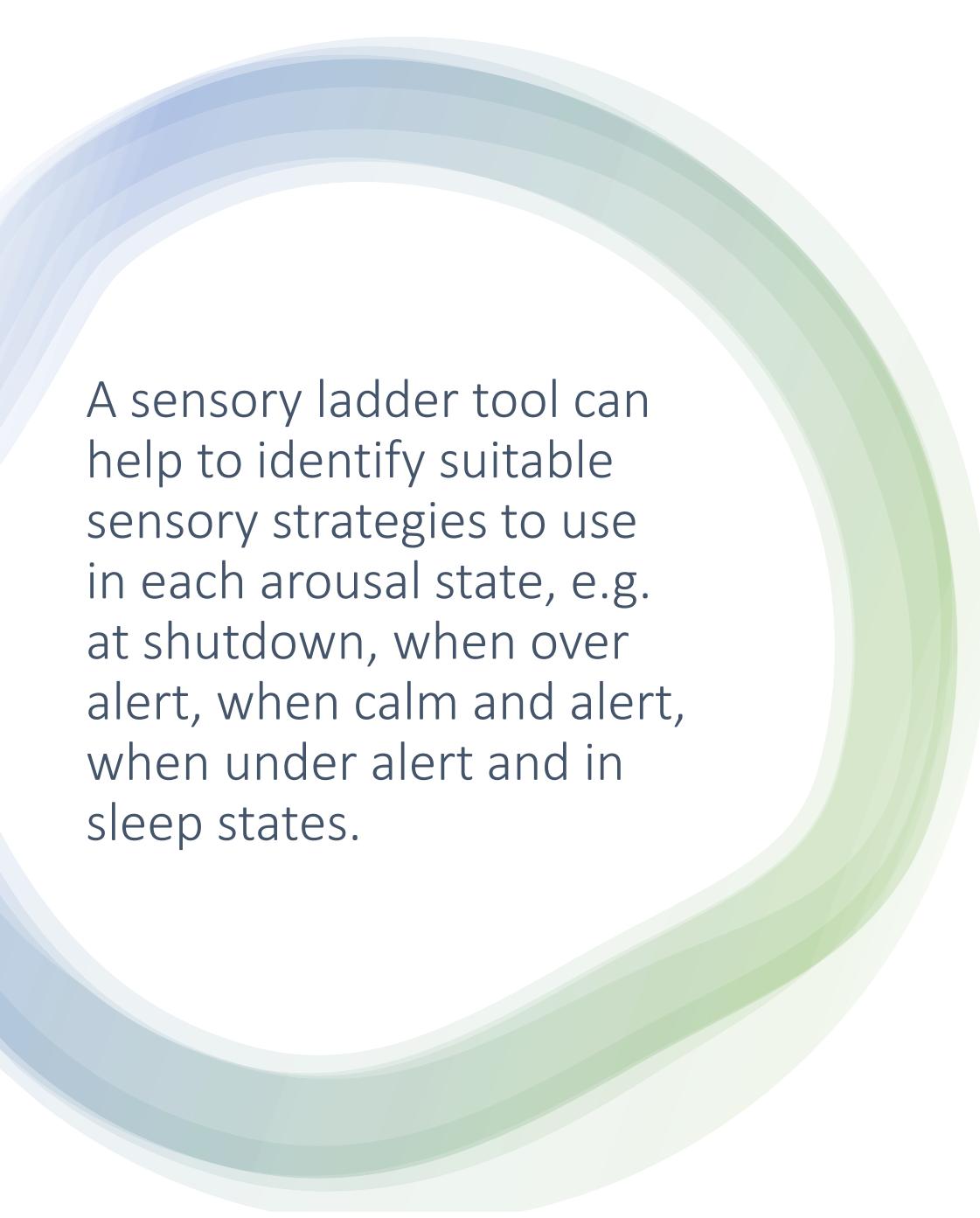
Touch (Tactile Input):

Twist own hair	Fidget with the following:
Cool shower	A straw
Warm bath	Paperclips
Receive a massage	Cuticle/nails
Pet a dog or cat	Pencil/pen
Drum fingers or pencil on a table	Earring or necklace
Rub gently on skin or clothes	Phone cord while talking
Put fingers near mouth, eye or nose	
Move keys or coins in pocket with your hand	

Look (Visual Input):

Watch a fireplace	Dim lighting
Watch a fish tank	Fluorescent lighting
Watch sunset/sunrise	A cluttered desk
Open window shades after a boring dark movie	Sunlight through bedroom window while sleeping

Adapted from: Take Five: Staying Alert at Home and School, Therapy Works, Inc., www.alertprogram.com, 2001.



A sensory ladder tool can help to identify suitable sensory strategies to use in each arousal state, e.g. at shutdown, when over alert, when calm and alert, when under alert and in sleep states.

Shutdown I am feeling dissociated, unreal, dreamlike, catatonic, freeze, at risk of self-harm	I need “de-stim” time. Calming strategies Darkened room No or calming music
Over Alert I may be defensive and reactive. I am feeling angry, aggressive, irritable, and anxious.	Deep pressure activities: self-massage, weighted blanket, Proprioceptive activities: <u>Trampette</u> jumping, yoga ball, push against a wall, walking, rocking, cleaning, doodling, re-arrange furniture, gardening, shake feet and hands, brushing/petting the dog.
Calm and Alert I am feeling clear, calm, awake, alert and able to engage in my chosen activities.	
Under Alert I am feeling low, bored and disinterested.	Light touch: Knitting, stroking dog. Strong smells: citrus, vanilla Sounds: high energy music
Sleep States	

Summary



We hope that you have learnt some information about sensory processing and the experiences that autistic people can often have. We hope that this has provided some tools and information to help you develop some useful strategies

References

National Autistic Society website:

<https://www.autism.org.uk/advice-and-guidance/topics/sensory-differences/sensory-differences/all-audiences>

<https://www.understood.org/articles/en/interoception-and-sensory-processing-issues-what-you-need-to-know>

Gillingham G. (1995) Autism: handle with care!: understanding and managing behavior of children and adults with autism. Future Education Inc

Further reading and resources:

Some ideas of things you could do at home can be found here in our sensory video: <https://youtu.be/P4KgTsq9QbQ>

Laurie, C. (2014) *Sensory Strategies* London: The National Autistic Society

Higashida, Naoki (2014) *The Reason I Jump: One boy's voice from the silence of autism*. Sceptre

Further Information

There are various online sensory shops for equipment and tools:

<https://www.sensorytoywarehouse.com>

https://www.sensorydirect.com/?gclid=Cj0KCQjw--GFBhDeARIACH_kdZkPj5Y3cWaF4oKdgx4ZVI8644Q_b_QIdIFJeD_cR8PEdBjWuINSDsaAm64EALw_wcB

<https://www.sensorytoysuk.co.uk>

Sensory toolkit: <https://thespiralfoundation.org/adults-and-adolescents-toolkit/>

Grandin, T. (2006) *Thinking in Pictures*. Bloomsbury Publishing

Purple Ella, Sensory processing video: [AUTISM AND SENSORY PROCESSING | Purple Ella - YouTube](https://www.youtube.com/watch?v=JyfJyfJyfJy)