THE SENSORY WORLD OF AUTISTIC PEOPLE

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Introduction

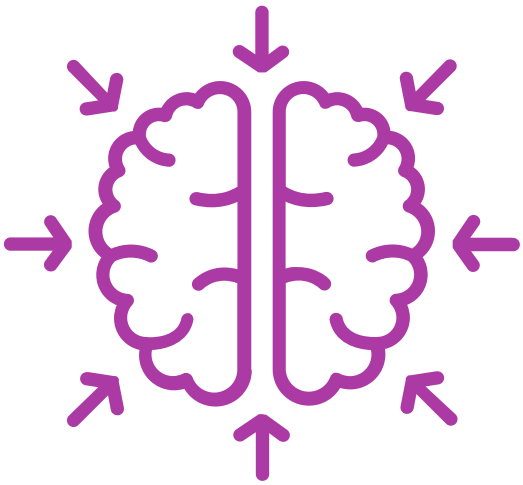
1 What is the sensory system?

Our senses help us gather and respond to information about the environment and our bodies. Our bodies have receptors throughout that pick up sensory stimuli. Our brain then takes in and understands information from our senses—like sight, sound, touch, taste, smell, balance, and body awareness. This helps us to interact with the world around us.

Each of us experiences sensory information differently. This does not mean that because one person experiences something differently, that their experience is not valid. Not everyone experiences the world in the same way, and that is ok. Some people prefer spicy foods while others may prefer milder tastes. Some may need music or noise to concentrate while others may need quiet backgrounds.

Just as we have different sensory preferences, so do autistic people. Sensory challenges are one of the biggest difficulties autistic people experience. Most autistic people experience their sensory world very differently to the way non-autistic people do.

The aim of the booklet is to create awareness, acceptance, understanding and accommodations for the sensory experiences of autistic people



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2.

Under and over sensory sensitivity

Some people might be oversensitive (hypersensitive) or under sensitive (hyposensitive) to sensory information.

Oversensitivity or Hypersensitivity means the person registers sensory information much more than other people. The person might hear sounds we cannot, see small dust particles we cannot, or even details in a picture that we miss. You might find that an autistic person is unable to filter out background noises, and they therefore miss what you are trying to tell them.

Undersensitivity or Hyposensitivity, on the other hand, is when the person may not register certain sensory information unless it is very intense. This could be smell, sounds, textures, tastes, or even visual information. Children with this profile are also often labelled as clumsy or rough with objects and their peers, simply because their bodies are not registering or experiencing sensory information, for example pain, in the same way.

Hypo- and hypersensitivity can occur together within different senses. It could also be both at different times.It will also differ depending on other factors such as how the person is feeling at the time, how much sleep they have had or if they are just not having a great day. These sensory differences can affect a person's life quite quiet a lot, and we tend to see the effects in the person's behaviour.

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3. How do our senses affect us

It is important that we understand how autistic people process sensory information so that we can use this information to support them. We can use their sensory preferences to help soothe them when they are feeling overwhelmed. Knowing what exactly what sensory input they need, like or avoid can help shape how we interact with the autistic person. It also allows us to modify the environment to ensure they can reach their potential.

Many autistic people explain that when they feel overwhelmed, it is almost as though they are receiving too much information. The information can also get mixed up in the brain.

When this happens, we can see one of three things:

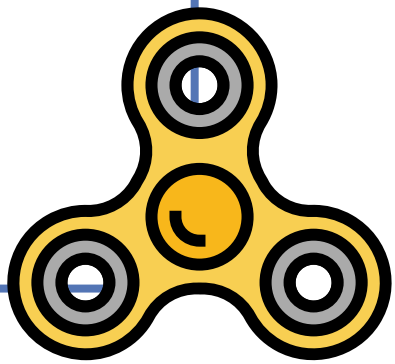
- The persons behaviour may seem difficult or challenging
- They may withdraw or remove themselves from the situation
- They may have a meltdown

By making small changes you can often help to avoid a meltdown or help while the person is having a meltdown.

• **Be aware**. Look around, is there anything that could be creating a difficulty for the person? Can you remove it? Or, can you move the person to a calmer, quieter space?
• **Be creative**. How can you make sensory experiences positive?
• **Be prepared**. If you know that there is going to be sensory challenge, then try to prepare the autistic person beforehand if possible.

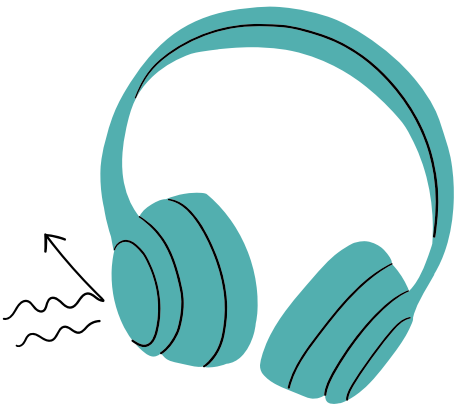
4. Stimming

Stimming (self-stimulatory behaviour) refers to repetitive movements, sounds, or activities that autistic people use to regulate emotions, process sensory input, or express themselves. It can take many forms, such as hand-flapping, rocking, spinning, or vocal sounds. Stimming is an important tool that helps with self-regulation, reducing anxiety, and maintaining focus. Suppressing or discouraging stimming can cause distress and discomfort, making it crucial to create environments where people feel safe to stim freely and authentically.



5. Adapting the environment

Environmental adaptations and accommodations are adjustments made to the environment to support individuals with sensory differences. These accommodations aim to create an environment that is conducive to the individual's sensory needs, allowing them to function optimally and participate fully in daily activities.

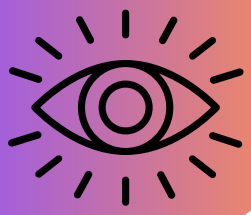


To provide the autistic individual with the correct sensory environment you should always chat to an Occupational Therapist to find out about the individual's sensory profile, and what should be included or removed from their environment.

Remember that each person's sensory needs are different. Always monitor the person's response when trying out the adaptations/ activities and stop if there are any signs of discomfort.

6. OUR 8 SENSES

Sight (visual)



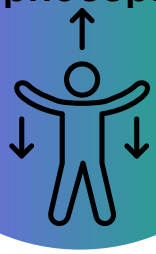
Touch (tactile)

Smell (olfactory)

Taste (gustatory)

Balance (vestibular)

Body awareness (proprioception)



Internal sense (interoception)

Sound (auditory)

Sound (auditory)

The auditory system is how our brain processes sounds—like voices, music, or background noise—so we can understand and respond to what we hear. Processing what you are hearing is important for attention, instruction following and speech and language development.

Differences or difficulties may be:

Oversensitive	Undersensitive
• Sensitive to loud sounds • Hears things others cannot hear • Covers ears with hands • Unable to filter out noises and sounds that are unimportant • Might be distracted by background sounds • Gets agitated and annoyed in large crowds	• Speaks loudly • Might be quite noisy • Turns up the volume on the TV or radio • Constantly makes sounds • May appear not to hear other sounds • Could enjoy crowded and noisy environments • Might bang doors and objects

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Close doors and windows to help reduce external noises • Prepare the person for noisy environments • Provide ear plugs or headphones – either with music or without music	• Listen to music • Bang on pots and pans • Play a musical instrument • Turn on a fan to create white noise or provide other white noise such as playing rain sounds.

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Sight (visual)

Information from our eyes help us understand what we see, where things are, and what they look like. This is important for skills like reading and writing. Eye movements are also important. These are a type of physical movement, just like moving our hands or feet.

Differences or difficulties may be:

Oversensitive	Undersensitive
• Very sensitive to bright lights as well as sunlight • Sensitivity to light might lead to sleep difficulties. • Sensitivity to patterns or visually busy environment. • Might be sensitive to certain colours • Might see particles in the air • It might be easier and enjoyable to focus more on detail than the whole object	• Attracted to visual stimulation – looks at lights • Switches lights on and off • Stares into mirrors, enjoys shiny objects and reflections • Objects might appear fuzzy, and out of focus, or very dark • Poor depth perception – problems with throwing and catching as well as clumsiness

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Reduce fluorescent lighting or lower light • Provide sunglasses or a hat • Give them an area to work in that does not have a lot of visual distractions (e.g. let them sit facing away from the window) • Use blackout curtains • Reduce visual information on walls • Reduce visual clutter	• Brighten lights • Provide a sensory bottle • Look at books • Provide visually interesting items- favourite colour, interesting pictures, shiny objects, interesting patters

Touch (tactile)

The skin — particularly more sensitive areas such as the face, hands, mouth, and feet — provides information about touch, pressure, texture, temperature, pain and movement. Information regarding touch helps tell us about the shape, texture, size, and temperature of our environment. It helps us distinguish between threatening and non-threatening touch sensations. Processing touch helps our understanding of where our body is in space. It is important for effective tool use and accurate fine motor control and is also a building block in the process of motor planning.

Differences or difficulties may be:

Oversensitive	Undersensitive
• Does not like light touch • Pulls away from hugs and kisses • Does not like getting hands messy or dirty • Might be fearful when others approach • Will only wear certain types of clothes or tolerate certain textures, for example clothing labels might be uncomfortable • Touch might be painful and uncomfortable • May not want anything on their hands and feet • May not want to wash their hair or have their hair brushed • Food textures may be uncomfortable	• Only registers strong touches • Wants to touch everything • Insistence on holding something in their hand • Might hold others tightly or touch with more force than necessary • Craves touch and comes across as clingy • Has a high pain threshold • Might be unable to feel food in their mouth • May self-harm • Enjoys heavy objects on top of them • Faecal smearing • Chewing on objects – this could include clothing and inedible objects

Touch (tactile)

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Ask the person before you touch them and don't touch them if they say no • Allow the person to do certain activities themselves e.g. brushing their hair, this way they know what they can tolerate • Turn clothes inside out so that seams are on the outside or provide seamless clothing • Cut labels off clothing • Allow the person to wear clothes they are comfortable in • Use toothbrush with soft bristles • Use soft cloth to wash	• Squish playdough, kinetic sand, foam or slime • Knead bread or pizza dough • Play with sand and water • Play with silly putty • Play with stress balls, or balls with different textures • Fingerpainting • Draw with shaving cream • Smearing: offer an alternative with a similar texture

Smell (olfactory)

The nose provides information about smells, which is the chemical makeup of particles in the air. Smells are strongly related to our memories and can also have a strong influence on our emotions.

Differences or difficulties may be:

Oversensitive	Undersensitive
• Smells might be intense and over-powering – can lead to toileting problems • May not like people with strong smelling perfumes • May not want to wear clothes washed with strong smelling products • May find the smell of cleaning products overwhelming	• May not notice extreme smells – this could also include their own body odour • Might like smelling object for example other people's hair • Might lick things

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Use unscented soaps, deodorants and shampoos • Use unscented cleaning products • Create a fragrance-free environment	• Introduce their favourite smells into the environment via scented candles, incense, fragrance etc.

Taste (gustatory)

The taste system gives information from the mouth and tongue on how things taste, such as sweet, sour, salty, bitter, etc. Taste is important for our enjoyment of food and also protects us against things that could be harmful if ingested. It is often linked closely with smell.

Differences or difficulties may be:

Oversensitive	Undersensitive
• Might find common smells and tastes repulsive • Gags or vomits easily • Might be a picky eater and have a restricted diet • Flavours of certain items might be too strong • Textures might cause discomfort • Might not like different foods touching or mixing	• Might enjoy very spicy food • Seeks out strong tastes • Eats non-edible objects or put non-edible objects in their mouths– e.g. stones, dirt, soil, grass, metal, faeces • Needs to smell or taste everything

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Change the texture of the food • DO NOT ever force-feed a person • Separate different foods • Think about multi-vitamins • Find out which textures, smells and tastes they can tolerate better • Provide them with their safe foods.	• Chew on gummy sweets • Eat crunchy food – carrot sticks, apples or pretzels • Chew on chew toys • Blow bubbles through straws into coloured water • Blow a whistle • Blow bubbles • Use a straw to drink thick liquids like milkshakes

Balance (vestibular)

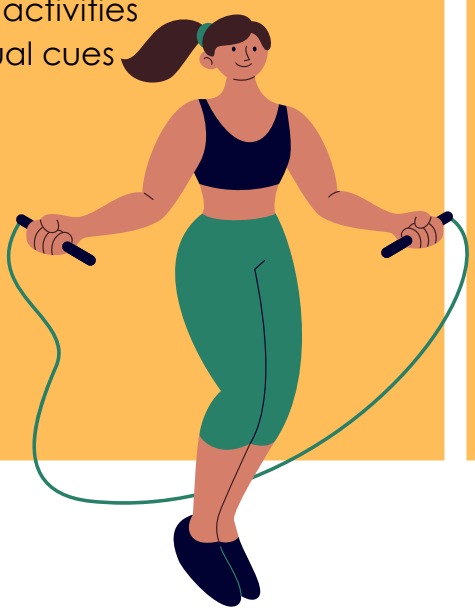
The vestibular system involves sense receptors in the inner ear. It helps us understand where we are in space, how we are moving, and how to keep our balance. It helps us sense the speed and direction of our movements. Vestibular processing affects our posture, balance, eye movements and levels of alertness.

Differences or difficulties may be:

Oversensitive	Undersensitive
• Strong emotional reaction to unexpected movement • Might resist movement activities • May get dizzy and nauseous from movement activities • Might always want to have their feet on the ground or sit down • Often anxious and insecure • Car sickness	• Very active • Seeks out movement, climbing, falling, spinning. • Rock and/or swing to get sensory input • Seems to not see danger • Rarely gets dizzy • Difficulty sitting still

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Consult an occupational therapist • Break down bigger activities into smaller activities • Use visual cues	• Run, jump, march, dance or walk • Somersaults or rolling down a hill • Push-ups • Climbing stairs • Swinging on swings • Climbing and sliding on playground equipment • Riding bikes or scooters • Standing jumping jacks • Hopping on one foot • Bouncing on therapy balls with feet on the ground



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Body awareness (proprioception)

This system provides awareness of the body's position in space. It provides information about the movement and the position of our own muscles and joints, ligaments and tendons. It helps us move in a smooth, coordinated manner without having to look at the part of the body moving (for example most people don't have to look at their feet constantly while they are walking).

Differences or difficulties may be:

Oversensitive	Undersensitive
• These people may dislike being touched or hugged. • They may avoid certain movements like jumping or climbing. • They may become overwhelmed by crowded or physically active environments.	• Often unaware of body position • Awkward and clumsy • Poor muscle tone • Leans on people or objects • Stands too close to others • Bumps into objects and people • Seeks out pushing, pulling, banging and crashing

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Respect personal space — avoid touching or moving them without permission • Avoid rough play or hugs unless the person initiates it • Provide soft, low-pressure seating or resting areas (beanbags, soft chairs) • Offer loose-fitting, non-restrictive clothing • Break down movement activities into small, manageable steps	Provide heavy work activities (using your muscles and joints to push, pull, lift, or carry things) for example: • Carrying something heavy • Sweeping with broom • Wiping windows or tables • Doing wall push-ups • Digging in the garden • Kneading dough or playdough • Crawling under tables • Animal walks (like crab or bear walks) Provide deep pressure (firm touch or squeezing) for example weighted blanket, a tight hug (if wanted), tight clothing, lying under a pile of pillows or blankets, squeezing a stress ball or putty

Internal sense (interoception)

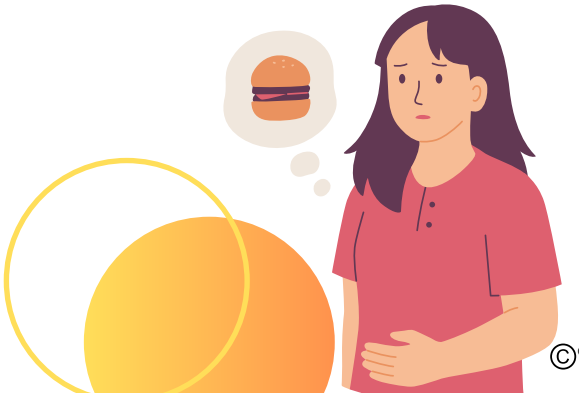
Interoception is a lesser-known sense that helps us understand what's happening inside our bodies. It tells us when we're hungry, thirsty, need the toilet, or if our heart is beating fast. It also tells us about our emotions — like how anger might make our body feel tense or we might feel our heart rate increase when we are anxious. Along with our vestibular (balance) and proprioceptive (body awareness) systems, interoception forms the picture of how we perceive our bodies.

Differences or difficulties may be:

Oversensitive	Undersensitive
• Feels even the slightest change in temperature • The slightest feeling of hunger, thirst or bathroom needs could lead to severe anxiety	• May not realise they need the toilet until it's too late • May not realise they are hungry • May not realise they are in pain • May have difficulty recognising own emotions

Some examples of environmental accommodations and activities:

Oversensitive	Undersensitive
• Allow the person to eat when they are hungry • Allow the person to go to the bathroom when they need to go • Use a blanket when they feel cold	• Provide a feeding routine • Provide a bathroom routine • Breathing exercises



7.

Sensory processing and movement

Sensory differences also mean that a person might have movement differences. This is because our movement is guided by our senses.

This is very important in autism, as research tells us that around 80% of autistic people have motor difficulties.

Our sensory systems work together to help us move smoothly and stay balanced. Here are some examples:

- Touch (tactile): Helps us feel textures, pressure, and temperature, so we know how hard to grip objects or when something is uncomfortable.
- Vision (visual): Helps us see where things are and judge distances, making it easier to move around without bumping into things.
- Body awareness (proprioception): Tells us where our body parts are without looking, helping us move without thinking too much, like reaching for a cup without staring at our hand.
- Balance and movement (vestibular): Helps us stay upright, know when we are moving, and keep steady when walking, running, or turning.

All these senses work together so we can move confidently, whether we're playing, walking, or doing everyday tasks.

8. Make a sensory bottle

A sensory bottle is a simple, engaging tool that supports self-regulation, focus, and calming. Watching the glitter swirl and settle can be soothing for both children and adults, offering a visual way to manage feelings of overwhelm, anxiety, or sensory overload.

What You'll Need

1. Clean, empty plastic water bottle (with lid)
2. Superglue or hot glue gun (for sealing the lid)
3. Warm water
4. Glitter (any colours you like)
5. Food colouring
6. A funnel (optional, but helpful)
7. Hair gel

Instructions

1. Remove any labels from the bottle and make sure it's clean.
2. Using the funnel, fill the bottle about ⅓ of the way with warm water.
3. Add 1 tablespoon of hair gel to the bottle.
4. Close the lid tightly and shake the bottle gently to mix the water and gel.
5. Open the bottle again and add glitter (as much as you'd like) and 1–2 drops of food colouring.
6. Close the bottle and shake to mix.
7. Check if you're happy with the content. If not, add more glitter and/or another drop of food colouring, then mix again.
8. Open the bottle and top it up with warm water.
9. Dry the bottle opening and the inside of the cap.
10. Use superglue or a hot glue gun to seal the lid securely.

Ideas for supporting common sensory challenges

Difficulties	Possible sensory reasons	Ideas
Picky eater	Sensitive to taste, smell and/or texture	Offer safe, preferred foods without pressure. Create a low-stress mealtime environment and explore new foods gradually, allowing them to engage at their own pace
Chews on everything - clothing and objects	May find this relaxing, enjoys the tactile and/or proprioceptive input of the item	Offer safe, appropriate alternatives like sensory-friendly chew toys, chewing gum or crunchy food like apples and carrots
Smearing	May like the texture in their hands or be they may be undersensitive to smell	Try and introduce similar materials like lotion, jelly or cornflour and water
Refuses to wear certain clothes	May dislike the texture and/or pressure on their skin	Turn items inside out so there's no seam. Remove any tags or labels. Allow them to wear clothes that they are comfortable in
Difficulties getting to sleep	May have difficulty shutting down senses, in particular visual, auditory and tactile	Use blackout curtains. Listen to music or white noise to cut out external sounds. Use weighted blanket
Finds concentrating difficult	May have too many sensory distractions – too noisy (e.g. people talking), lots of visual stimuli (people, pictures on the wall). Undersensitivity to proprioceptive and vestibular input can make it difficult to sit still because the body craves more movement	Position person away from the doors and windows Use furniture in the room to create an area free from distraction. Use noise canceling headphones. Provide movement breaks

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