

Sensory Integration Difficulties

I freely admit this is 'nicked' from the National Autism Society's website and can be found at:

www.autism.org.uk/15691

So all credit goes to them for this useful article!

Many people with an autism spectrum disorder (ASD) have difficulty processing everyday sensory information such as sounds, sights and smells. This is usually called having sensory integration difficulties, or sensory sensitivity. It can have a profound effect on a person's life.

Here, we look at:

- how our senses work
- the seven senses in detail
- sensory difficulties that people with an ASD may experience
- ways of dealing with sensory difficulties
- professionals and resources that can help.

HOW OUR SENSES WORK

Our central nervous system (brain) processes all the sensory information we receive and helps us to organise, prioritise and understand the information. We then respond through thoughts, feelings, motor responses (behaviour) or a combination of these.

We have receptors all over our bodies that pick up sensory information, or 'stimuli'. Our hands and feet contain the most receptors. Most of the time, we process sensory information automatically, without needing to think about it much.

People with sensory integration difficulties - including many people with an ASD - have difficulty processing everyday sensory information.

People who struggle to deal with all this information are likely to become stressed or anxious, and possibly feel physical pain. This can result in challenging behaviour.

"If I get sensory overload then I just shut down; you get what's known as fragmentation...it's weird, like being tuned into 40 TV channels".

Our seven senses

We have seven senses:

- sight
- sound
- touch
- taste
- smell
- balance ('vestibular')
- body awareness ('proprioception').

People with an ASD can be over- or under-sensitive in any or all of these areas. You may hear this referred to as being 'hypersensitive' or 'hyposensitive'.

Sensory sensitivities

Sight

Situated in the retina of the eye and activated by light, our sight helps us to define objects, people, colours, contrast and spatial boundaries. People with an ASD may experience the following differences.

Hypo (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 – problems with throwing and catching; clumsiness.

Hyper (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.

“She was Mrs Marek, a face upon which light danced maniacally, turning her into more of a cartoon than a human being. Welcome to Toon town...I'd like you to enter this torture chamber I call my kitchen and meet my wife who is a 3D cartoon”. Gillingham, G. (1995)

Sound

This is the most commonly recognised form of sensory impairment. Hearing impairments can affect someone's ability to communicate and possibly also their balance. People with an ASD may experience the following differences.

Hypo

- 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.

Hyper

- Noise can be magnified and sounds become distorted and muddled.
- Particularly sensitive to sound and can, for example hear conversations in the distance.
- Inability to cut out sounds – notably background noise, which often leads to difficulties concentrating.

“Do you hear noise in your head? It pounds and screeches. Like a train rumbling through your ears”.
Powell, J. (in Gillingham, G. 1995)

Touch

Touch is important for social development. It helps us to assess the environment we are in (is an object hot or cold?) and react accordingly. It also allows us to feel pain. People with an ASD may experience the following differences.

Hypo

- Holds others tightly - needs to do so before there is a sensation of having applied any pressure.
- Has a high pain threshold.
- May self-harm.
- Enjoys heavy objects (eg, weighted blankets) on top of them.

Hyper

- Touch can be painful and uncomfortable; people may not like to be touched and this can affect their relationships with others.
- Dislikes having anything on hands or feet.
- Difficulties brushing and washing hair because head is sensitive.
- Only likes certain types of clothing or textures.

“Every time I am touched it hurts; it feels like fire running through my body”. Gillingham, G. (1995)

Taste

Chemical receptors in the tongue tell us about different tastes - sweet, sour, spicy and so on. People with an ASD may experience the following differences.

Hypo

- Likes very spicy foods.
- Eats everything - soil, grass, Play-dough. This is known as pica.

Hyper

- Finds some flavours and foods too strong and overpowering because of very sensitive taste buds. Has a restricted diet.
- Certain textures cause discomfort; some children will only eat smooth foods like mashed potatoes or ice-cream.

Smell

Chemical receptors in the nose tell us about smells in our immediate environment. Smell is the first sense we rely upon. People with an ASD may experience the following differences.

Hypo

- Some people have no sense of smell and fail to notice extreme odours (this can include their own body odour).
- Some people may lick things to get a better sense of what they are.

Hyper

- Smells can be intense and overpowering. This can cause toileting problems.
- Dislikes people with distinctive perfumes, shampoos, etc.
"Smells like dogs, cats, deodorant and aftershave lotion are so strong to me I can't stand it, and perfume drives me nuts". Gillingham, G. (1995)

Balance (vestibular)

Situated in the inner ear, our vestibular system helps us maintain our balance and posture, and understand where and how fast our bodies are moving. People with an ASD may experience the following differences.

Hypo

- A need to rock, swing or spin to get some sensory input.

Hyper (Balance – Vestibular continued)

- 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.

Body awareness (proprioception)

Situated in the muscles and joints, our body awareness system tells us where our bodies are in space, and how different body parts are moving. People with an ASD may experience the following differences.

Hypo

- Stands too close to others, because they cannot measure their proximity to other people and judge personal space.
- Hard to navigate rooms and avoid obstructions.
- May bump into people.

Hyper

- Difficulties with fine motor skills: manipulating small objects like buttons or shoe laces.
- Moves whole body to look at something.

Synaesthesia

Synaesthesia is a rare condition which some people with an ASD experience. A sensory experience goes in through one system and out through another. So a person might hear a sound but experience it as a colour. In other words, they will 'hear' the colour blue.

Ways to help

Here are some ways you may be able to help a person with sensory sensitivity. Often, **small changes to the environment** can make a difference.

Three points to remember are:

- **be aware:** look at the environment to see if it is creating difficulties for people with an ASD. Can you change anything?
- **be creative:** think of some positive sensory experiences
- **be prepared:** tell people with an ASD about possible sensory stimuli they may experience in different environments.

Ways to help: sight

Hypo (under-sensitive)

- Increase the use of visual supports. (See www.autism.org.uk/visualsupports for more information about using visual supports.)

Hyper (over-sensitive)

- Reduce fluorescent lighting - use deep-coloured light bulbs instead.
- Wear sunglasses.
- Create a workstation in the classroom: a space or desk with high walls or divides on both sides to block out visual distractions.
- Use blackout curtains.

Ways to help: sound

Hypo

- Use **visual supports** to back up verbal information.

Hyper

- Shut doors and windows to reduce external sounds.
- Prepare a person before going to noisy or crowded places.
- Wear ear plugs.
- Listen to music.
- Create a workstation.

Ways to help: touch

Hypo

- Use weighted blankets or sleeping bags.

Hyper

- Warn a person if you are about to touch him or her; always approach him or her from the front.
- Remember that a hug may be painful rather than comforting.
- Gradually introduce different textures - have a box of materials available.
- Allow a person to complete activities themselves (eg, hair brushing and washing) so that they can do what is comfortable for them.

Ways to help: taste

Some people with an ASD are hyper- or hyposensitive to taste, and may limit themselves to bland foods or crave very strong-tasting food. We have not included any ways to help because as long as someone eats a bit of a varied diet, this isn't necessarily a problem. For more information about ASD and restricted diets however, visit www.autism.org.uk/restricteddiet

Ways to help: smell

Hypo

- Use strong-smelling products as rewards and to distract people from inappropriate strong-smelling stimuli (like faeces).

Hyper

- Use unscented detergents or shampoos, avoid wearing perfume, make the environment as fragrance-free as possible.

Ways to help: balance

Hypo

- Encourage activities that help to develop the vestibular system. For children this could include using rocking horses, swings, roundabouts and seesaws. For adults, try games like catching a ball or practise walking smoothly up steps or curbs.

Hyper

- Break down activities into small, more easily manageable steps; use visual cues such as a finish line.

Ways to help: body awareness

Hypo

- Position furniture around the edge of a room to make navigation easier.
- Put coloured tape on the floor to indicate boundaries.
- Use the 'arm's-length rule' to judge personal space. This means standing an arm's length away from other people.

Hyper

- Do 'fine motor' activities like lacing boards (available to buy online).

How sensory sensitivity affects behaviour

Sometimes, a person with an ASD may behave in a way that you wouldn't immediately link to sensory sensitivities - but they may be the underlying cause. Here are some examples of how a person's behaviour may result from sensory sensitivities, and how you can help.

Problem: picky eater

- Possible reasons: sensitive to taste or texture, or unable to feel food around the mouth.
- Possible solutions: change the texture of food, for example purée it. Slowly introduce different textures around the person's mouth, such as a flannel, a toothbrush and some different foods. Encourage activities that involve the mouth, such as whistles or bubble wands.

Problem: chews on everything, including clothing and objects

- Possible reasons: may find this relaxing, or enjoy the sensation of chewing on the item.
- Possible solutions: offer latex-free tubes, straws or hard sweets (chill in the fridge).

Problem: smearing

- Possible reasons: may like the texture of faeces or not be very sensitive to smells.
- Possible solutions: try and introduce things like jelly, or cornflour and water to handle instead; introduce alternative strong-smelling items.

Problem: refuses to wear certain clothes

- Possible reasons: may dislike the texture or pressure of clothes on their skin.
- Possible solutions: turn clothes inside out so there is no seam, remove any tags or labels, allow the person to wear clothes they're comfortable in.

Problem: difficulties getting to sleep

- Possible reasons: may have difficulty shutting down their senses, in particular sight and hearing.
- Possible solutions: use blackout curtains or weighted blankets; listen to music to cut out external sounds.

Problem: finds it difficult to concentrate in the classroom

- Possible reasons: too many distractions like noise (talking, bells, chairs scraping the floor) or visual stimuli (people, pictures on the wall). May also find holding a pencil uncomfortable (it may feel hard or cold).
- Possible solutions: position child away from doors and windows so there are fewer distractions. If possible use an individual workstation with some screens around it; or use classroom furniture to create a distraction-free area for the child. Try different textures to make the pencil more comfortable.

Professionals who can help

Occupational therapists design programmes and often make changes to the environment so that people with sensory difficulties can live as independently as possible.

Speech and language therapists often use sensory stimuli to encourage and support the development of language and interaction.

Music therapists use instruments and sounds to develop people's sensory systems, usually their auditory (hearing) systems.

Sensory rooms

Sensory rooms can help to stimulate, develop or balance people's sensory systems. Some specialist schools, local services and hospitals have them, as well as some nurseries. You may also come across sensory gardens. Some families create a sensory room in their house (or adapt a corner of a room, perhaps screening it off with a curtain).

Sensory rooms might include:

- soothing music
- vibrating cushions
- fibre optics
- mirror balls
- bubble tubes
- water beds

- tactile walls
- disco lights
- projectors
- equipment that is activated by switches, movement, sound or pressure so that people learn about cause and effect.

The reported benefits of sensory rooms come mainly from personal experiences and observations, as there is only a limited amount of research.