

## Where's my seat?

### The Environmental Review

In the last chapter, we discussed how to prepare the child for their new challenge, now our focus switches to the classroom environment and how it can impact on the child's learning. Getting the environment right from the beginning is a fundamental step and can help avoid unnecessary problems before they arise.

Environment is not simply the concrete objects that we can hold and see. It is absolutely everything around us; the air we breathe, the temperature of that air, smells, lights, sounds. Although a neurotypical child may have no issue sitting in a cosy classroom surrounded by posters and clutter, the child with a diagnosis of Autism can experience this as a virtual war zone for their senses. In order to understand this phenomenon we must first look at the sensory difficulties which a lot of children on the spectrum experience.

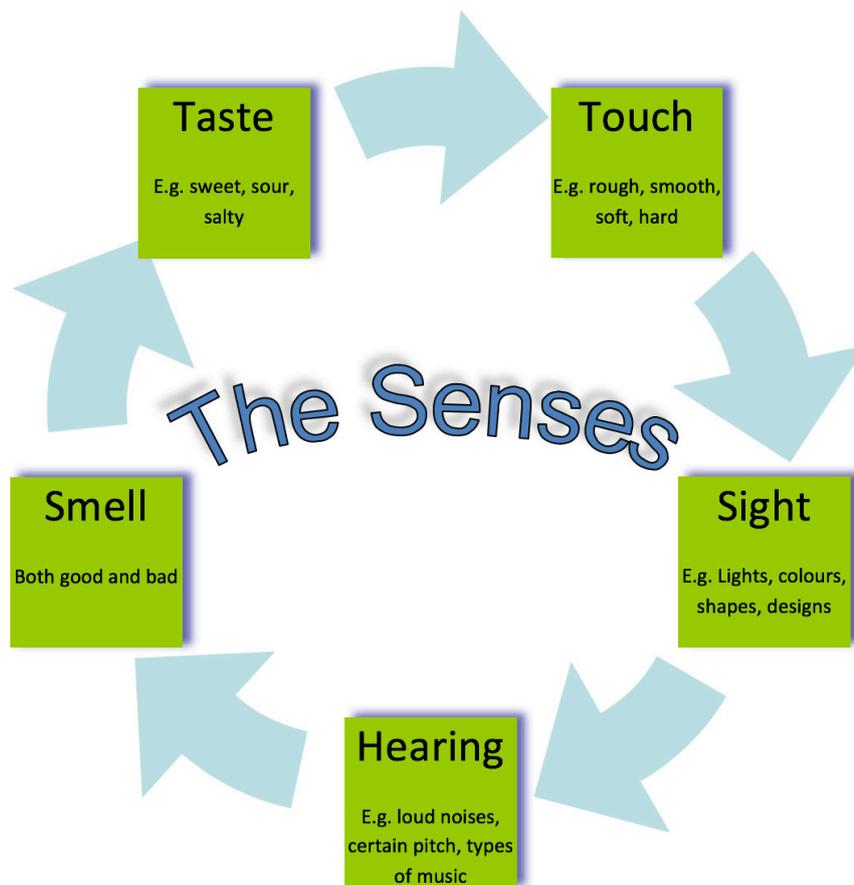
People with a diagnosis of ASD appear to experience the world in different way to neurotypical individuals. Sensory Integration Dysfunction or Sensory Processing Disorder are both ways to describe the difficulty some people's nervous systems have taking in, integrating and making use of sensory information. This changes how a person then responds to changes in their own body, the environment and how they interact with it and others around them. Sensory integration theory has three important postulates. First, neurotypical individuals naturally take in sensory information from their environment and from their own bodies. Their central nervous systems process and integrate this information and use it to plan and organize their behaviour. Second, abnormalities in integrating sensory inputs result in conceptual and motor learning difficulties. Third, sensory integration can be enhanced by providing sensory experiences in the context of a meaningful activity, and by the planning and production of an adaptive behaviour. Moreover, improvements in sensory integration can enhance learning (Fischer, Murray & Bundy, 1991)

Over the years I have spoken to many Occupational Therapists, and I am always fascinated by the knowledge they impart about the senses. There appears to be two extremes of this experience; hypersensitivity and hyposensitivity.

## Hypersensitivity

Individuals who are hypersensitive take in too much information via their senses, so their brain becomes overwhelmed far quicker than the average individual.

All of their senses can be effected, and each individually to a different degree.



There are two main reactions to hypersensitivity.

1. The first being that the child becomes inactive. In essence the child zones out or becomes unresponsive. This is because their brain is unable to make sense of the information being received.
2. The second response is that the child becomes hyperactive and over reactive to the situation as the brain cannot cope with the quantity of information that it is receiving.

One of my students a number of years ago described the sound of a person writing with a pencil next to him like a scratching on a blackboard. Each time the class were given a written exercise, he would snuggle his ear into his shoulder on his right side and try to continue to write, while placing his left hand over his left ear. Obviously the teacher became concerned when she noticed this and requested him to remove his hands. This caused a row to break out between them, which ended in the student refusing to write and trying to leave the classroom.

Once I questioned why he was doing this, he was quite able to articulate the sensation he was experiencing and simply moving him to a desk away from others during written exercises was a sufficient measure to counteract this sensation.

Each of the senses can be affected by hypersensitivity. Below you will find a few examples from my experience of ways in which each sense can be affected.

**The Visual System (sight):** Focus can be distorted and smaller details become the main focus e.g. noticing small details in a picture which are not the main focal point in the picture. It is also possible that bright lights can appear to jump about, causing confusion and annoyance.

**The Auditory System (hearing):** Small sounds which would go unnoticed by neurotypical individuals can become the overriding sound in the vicinity, causing severe distress to the individual.

**The Olfactory System (smell):** Both good and bad smells can be intensified. This can then result in the smell becoming overpowering and nauseating at times. Children who suffer from hypersensitive olfactory system can experience difficulties with toileting, especially with public toilets.

**The Tactile System (touch):** Touch can actually be both uncomfortable and painful for these children. Therefore, items that come into contact with their skin e.g. clothing, shoes, hairbrushes, clips, jewellery, can cause extreme reactions. It can also cause problems with personal relationships as children with this particular difficulty can shy away from physical contact with those close to them.

**The Gustatory System (taste):** Food textures can pose serious problems for individuals affected by this imbalance, often choosing mashed or pureed foods. Children can also gravitate towards bland food, such as crackers, bread and plain biscuits. I have on many occasions come across lunches which I can only describe as beige. All beige lunches consisting of custard cream biscuits, cream crackers, bread rolls, tuck crackers, to name a few. No fruit, lots of carbohydrates, no colour.

## Hyposensitivity

People who are hyposensitive receive too little information. This can result in the brain struggling to comprehend the world around and make sense of the little information it is receiving. Again, all or simply some of the senses can be affected by hyposensitivity.

The two main reactions to hyposensitivity are the same as those to hypersensitivity, although for different reasons.

- Inactivity, because their brain is struggling to make sense of the information it is receiving.
- Hyperactivity, because the brain is craving more information. This can ultimately result in self-stimulation or inattention.

**The Visual System (sight):** children with a hyposensitive visual system can appear clumsy as their visual perception can be skewed and their vision distorted or blurry at times.

The Auditory System (hearing): Crowds and busy environments pose no problem to individuals affected by this. They can appear to be selectively hard of hearing, at times registering certain sounds and not others. However, this can simply be because some sounds are heard and other sounds go unintentionally unacknowledged.

**The Olfactory System (smell):** Individuals affected by this may not notice bad odours, and may have little or no sense of smell. I have encountered children who have actually sought out strong smells, as if needing the stronger smell in order to be able to smell anything at all.

The Tactile System (touch): A failure to express pain upon being injured is one of the most upsetting elements of hyposensitivity for parents and carers of children with ASD. They appear to have a high threshold for pain, and can even engage in self-injurious behaviour at times without appearing to register the pain they have inflicted. Contrary to children with hypersensitive tactile systems, children with hyposensitive tactile senses can actually seek out physical contact. They can crave tight squeezes, firm hugs, pressure on various parts of their body, and even heavy objects to be placed over them.

**The Gustatory System (taste):** This imbalance can present as the person consuming usually inedible items such as mud, grass, plants and paper. They can also seek out extremely spicy foods or foods with extreme flavours e.g. vinegar, chilli sauces. I have witnessed children with cravings for toothpaste and even correction fluid, the stronger the taste the better, even if the substance is toxic. This is extremely dangerous, as the extreme taste will not stop the child from consuming the item, therefore this behaviour can prove hazardous.

## The Hidden Senses

There are also two other senses that we have not mentioned. These senses are not as well known and therefore issues with these senses can go unnoticed in the classroom except to those with a trained eye.

**The Vestibular System:** This is also known as the balance system and is situated in the inner ear, and just as the name suggests this sense is fundamental to us maintaining balance and posture. It can provide information about the position of our body in space, how fast or slow it is going, and the direction it is heading in.

This sense can also be effected by hyper and hypo sensitivity. Individuals with hyposensitive vestibular systems can appear to crave fast repetitive movements such as rocking or swinging. Individuals with a hypersensitive vestibular system can experience difficulty partaking in sports activities where speed and skill is required.

**The Proprioceptive System:** This system is situated in our muscles and joints and tells us about movement and body position. Its receptors are located within our muscles, joints, ligaments, tendons, and connective tissues. Proprioceptive hypersensitivity is reflected in odd body posturing, difficulty manipulating small objects, and the individual will have difficulty knowing where their bodies are in space. Individuals experiencing hyposensitive proprioceptive input will appear floppy, and will often lean against objects for support e.g. walls, tables etc. They will appear clumsy, bumping into people and objects, and will stumble and fall and times.

Collectively, these seven senses have a huge impact on our day to day functioning. Teachers are often unaware that sensory disturbances, hypo and hyper equally, can cause such severe reactions in their students. As a result, they tend to look elsewhere for explanations for their behaviour in the school environment. This can result in children being labelled as bold, confrontational, disruptive, lazy, unmotivated or non compliant. Labels like these can prove extremely damaging and can stick to the child for the remainder of their school career, so if you suspect your student or child is suffering from any of the sensory problems listed above, enlist the services of an Occupational Therapist with Sensory Integration Training. A trained experienced OT will be able to assess your child for these sensitivities and advise you of strategies to help alleviate the symptoms in the school environment.

Now that you have a clearer idea how the individual can be affected by their senses, it's time to take a closer look at the classroom environment and assess how we can structure this area appropriately before the child even enters it. This can put a halt to problems before they arise and save valuable time for both you and the student.

### Analysing the Classroom from a Sensory Perspective

In a typical classroom there can be a multitude of sensory disturbances. We also need to keep in mind at all times, that each child is an individual, and therefore, what is disturbing for one child, may not have any effect at all on another child with a diagnosis of ASD. There is no general rule of thumb, but once you comprehend the various factors, it is easier to spot the problems. It is always better to be proactive rather than reactive, so preparing the environment in anticipation of difficulties is always a positive step.

Let's see if you can analyse this classroom and find possible causes for concern for a pupil with a diagnosis of ASD

**Read the following passage, taking note of any issues which you feel may pose a problem from a sensory perspective for the child with a diagnosis of ASD**

This is a large classroom housing 29 students. Desks are set up in groups, with three students facing each other on opposite sides of the desk. There are five desks in total and our student, Tom, is at the bottom desk on the right hand side, with his SNA seated to his right and a student to his left. Tom is easily distracted and finds it hard to sit still in his seat. Tom loves to chat about his favourite TV shows and constantly initiates conversations with his SNA and peers about the previous night's episodes. The students at the desk with our student are chatty and at times disruptive to the class. The desk is untidy, pencils, rulers, sharpeners and books are scattered around the desk.

The interactive white board is situated at the top of the classroom with the teacher's desk to the left of it. The classroom has a high ceiling, which permits echoing. There are two large windows on the right hand side of the classroom, which overlook a busy road, with a constant flow of traffic. There is also florescent strip lighting positioned in two rows on the ceiling.

Plants grow on the windowsill next to the student, and the classroom toilet is to the rear. There are also radiators underneath the window, which are turned on for the majority of the year. The stereo used for music and stories is placed on a shelf in the corner to the rear of our student's desk. School bags are on the floor to the rear of each chair, and there is little space between the desks to allow the children to manoeuvre around the classroom.

Having read about the various sensory disturbances which can affect individuals on the Autism Spectrum can you now spot the problems which the student may encounter in this classroom? Let's break it down piece by piece...

## Seating Arrangements

In a number of the classrooms I have visited, children with autism have been placed at the back of the classroom seated with their Special Needs Assistant. When I question the reasoning for this, teachers always cite one of two reasons.

1. If the SNA is at the top of the class, the children will find it difficult to know who to follow, the teacher or the SNA.
2. Having the child seated at the back of the class gives them a quiet space to work with their SNA

Unbeknownst to teachers, sitting a child to the rear of the classroom is actually the least suitable place in the class for the majority of students. In a class of 29 students, one SNA and one Teacher, you can be sure that there will be plenty of noise. If the student with Autism is seated to the rear of this classroom, they will have to process all the sensory information between his desk and the teacher before he can concentrate on what the Teacher is actually teaching. Filtering out superfluous sensory information is often a difficulty for children on the spectrum, therefore placing them at the back of any classroom is an unwise plan.

In general I have two rules for seating children with a diagnosis of autism in a mainstream class.

Shy Child, needs more socialisation	Easily distracted child, lacks concentration
<ul style="list-style-type: none"> <li>• Facing peers at group desk of no more than 3 peers.</li> <li>• Group desk at the top of the classroom in front of the Teachers desk.</li> <li>• Should not have to turn body to see the whiteboard or teacher.</li> <li>• Social peers with empathetic nature in close proximity</li> </ul>	<ul style="list-style-type: none"> <li>• Seated in a single row of desks, with a child on one side</li> <li>• Seated directly in front of the teachers desk and whiteboard</li> <li>• Quiet, studious child to be seated next to the child</li> <li>• Should not have to turn their body to view the whiteboard or teacher</li> </ul>

If you have a student that is a mixture of both i.e. shy but easily distractible, then it is advisable to follow my recommendation for the child that is easily distracted. Social skills can be addressed separately, as in this instance their distractibility and concentration are of paramount concern. Our student Tom has been placed at a desk with 3 pupils facing him, one student to his left and his SNA to his right. Following the rules set out about it is clear that this is not the appropriate place for Tom. Tom is easily distracted, and loves to chat, so in this seating position he has a ready-made audience. We are also told that the peers in his vicinity are frequently disruptive, which again is an unsuitable pairing for Tom. So where should he be placed? Tom's teacher should follow the guidelines for the child who is easily distracted and lacks concentration. Tom's SNA should not be seated directly beside him either. As we have been told Tom is prone to chatting to his SNA, and also in an effort to promote independence, Tom's SNA should be seated slightly away from him, either behind or beside Tom. The SNA should be positioned so that he/she is too far away for general chit chat, but can be on hand quickly when aid is required.

It may sound obvious, but the desk your student is seated at, should be the appropriate height for the chair, and the chair should allow the student to sit upright with their feet flat on the ground and knees level with their hips.

Some students find a hard wooden chair too uncomfortable, so I have listed a number of ideas for these students below.

- A cushion- A simply softly padded cushion can be enough to ensure your students comfort during the school day.
- Move and sit cushion- An inflatable rubber cushion, covered in small bumps which deliver sensory feedback to the individual. These cushions are usually slanted to provide optimum posture for written tasks. It also permits movement for the child without them having to leave their seat. You can also find these cushions in a round shape which are referred to as disco sit cushions. An occupational therapist will be able to advise you as to whether this is an appropriate aid for your child/ student.
- Therapy Ball/ Swiss Ball- This is also known as an exercise ball, and is used frequently in gyms for increasing muscle tone. A large inflatable rubber ball, which the individual can bounce gently on. This ball can be used in the place of a chair for all or simply a portion of the school day. It again allows the student to move, while still remaining seated at their desk.
- Some students may prefer to stand for certain portions of the day. This should be permitted and breaks from the seating position should be provided when and as the student requires them. These breaks do not need to be extensive, a few minutes may be enough to relax the student and allow them to re-focus on their work.

Students should also be seated in a space which experiences little foot traffic, away from windows and doors. Their sensory needs should also be taken into consideration when a seating position is being decided upon. Our student Tom has been placed beside a radiator, next to a window facing a busy road, adjacent to the toilet, and also some plants, so his senses were being assaulted from all directions. If the student has come to school with a sensory passport, or a comprehensive occupational therapy assessment, then you may be able to focus your efforts on the identified areas and prevent any sensory issues. If this is not the case then you may have to try to cover all bases, and watch for any sensitivities as they arise.

Strip lighting is the most commonly used lighting in school settings, and is also the most troublesome for children with ASD. The noise which arises from them, can be tuned out or even go unregistered by most individuals, but for the child with hypersensitivity in their auditory senses, this can prove a nightmare. In order to test for a sensitivity in this area, a three week observation is required. For week one, keep everything as normal, and keep a daily diary logging the students behaviour, mood, concentration and taking notes of any signs of discomfort in the classroom. During week two, leave the lights off, and carry out the same observations and log them in the diary. You may need to bring in lamps with regular bulbs to help illuminate the classroom. On week three, the lights are again turned on and the same observations should be made. If you notice an improvement in any of the areas in week two, then take a closer look for any other elements that may have influenced the behaviour. Should this prove fruitless, then a sensitivity to fluorescent lighting may be a possibility. If this is the case, there are a number of steps that you can take to help ease the sensitivity for the student.

- Keep the lights turned off for periods during the day
- Keep the strip of lights above the student turned off
- Seat the student away from the direct light e.g. do not sit them directly under the strip
- Provide alternative sources of light e.g. lamps, fairy lights around the blackboard
- Provide ear muffs during independent work time if the child complains about the buzzing sound.
- Using soft coloured paper instead of white can cut down on the glare created by the lighting
- Bulbs should be kept as new as possible, to avoid flickering.

## Organisation

Organisation and management of the environment surrounding the child is extremely important. The space in which the child is seated should be freely accessible and the child should have enough space to pull back their chair and sit down without encountering obstacles.

Students should be encouraged to place their bags on the back of their chair or under the table, rather than behind their chair, as they are a trip hazard. A child with motor planning difficulties (which many children on the spectrum experience), or children with hyposensitive proprioceptive systems can find it extremely difficult to navigate obstacles in their path, therefore a clear path to their desk and other areas of the classroom is a must for health and safety reasons.

Providing a basket on the table for students to place their books in is another way to provide structure for the pupil with ASD, as well as neuro typical students. Clutter can be confusing, and by minimising this, we minimise organisational confusion for the student. An alternative to this is a rectangle of electrical tape in a bright colour taped to the desk. Take the students largest book and place this in the corner of the desk. Tape the electrical tape around this book and this will serve as a visual cue for the student to place their books neatly within this line. The student will need to be shown how to use this rectangle and should be praised continuously at the start for using the area. This praise can be faded as the student becomes competent at using it appropriately.

A small Pringles tube can be decorated by each pupil and used to house their pencils etc. I would suggest however that you only ask the students to place a pencil, eraser and sharpener in this compartment to avoid the student spending time locating their pencil. Colouring pencils can be stored in their bags until required.

It may sound like a minefield of obstacles and problems, but by carrying out an environmental review of your classroom a couple of times, spotting these problems will become second nature to you. Use The Environmental Review Checklist to check your classroom for possible problems. It will be beneficial to carry this out periodically throughout the year as situations can arise, and sensitivities become clear as the year progresses.

## The Environmental Review Checklist

### Section 1- Seating

Is the child seated in front of the whiteboard?	
Does the child have to turn their body to see the whiteboard?	
Is the desk the right height for the student?	
Does the chair match the desk? (I.e. is it the right height for the desk?)	
Is there peers facing the student? NB. Should the student be easily distracted, ideal answer here is no, if the student is shy then yes should be the optimum answer.	
Is the seating position away from regular footfall?	
Is the students seated beside a window?	

Section 2- Sensory issues	
Have you obtained a copy of the most up to date occupational therapy report?	
Have the parents supplied a sensory passport for the child?	
Have you allocated time for sensory breaks?	
Have you allocated time for movement breaks?	
Is the student positioned in an area with any pungent aromas?	
Is the student directly underneath the strips of fluorescent lighting?	
Have you investigated the possibility of a fluorescent light sensitivity?	
Is the student near the class toilet?	
Is your student noise sensitive?	
If the answer to the previous question is yes, have you taken steps to minimize the noise? E.g. tennis balls on end of chairs, thumbs up instead of clapping.	
Have you made clear walkways around the classroom?	

Section 3- Organisation	
Have you implemented a colour coding system?	
Have you minimized clutter in the classroom?	
Are the different areas in the classroom easily identified?	
Have you de-cluttered the students work space?	
Have you looked at school bag storage?	
Have you addressed easy access to essential items? E.g. pens, pencils, rubber, sharpener.	

Taking all of this information into consideration will hopefully enable your student to feel comfortable in their new learning environment. It is never too late to carry out an environmental review of your classroom, so whether your student is just entering the school system, or moving through the school cycle, carrying out these checks will help you to pinpoint areas in need of change and hopefully enhance your students learning experience.

I hope this chapter has helped to focus your attention on the sensory experience for your child with autism. This chapter is simply an introduction to the expansive area of sensory difficulties. Should you like to find out more information on any of the above topics I would suggest the following texts

- Yack, E., P. Aquilla, & S. Sutton, (2002) *Building Bridges Through Sensory Integration: Therapy for Children with Autism and Other Pervasive Developmental Disorders*. Las Vegas: Sensory Resources
- Kranowitz, C. (2005) *The Out-of-Sync Child: Recognizing and Coping with Sensory Processing Disorder* (2nd Ed.). New York: Perigee.
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- Myles, B., T. Cook, N. Miller, L. Rinner, & L. Robbins (2000). *Asperger Syndrome and Sensory Issues*. Shawnee Mission, KA: Autism Asperger
- Feldman, J.R. (1997). *Wonderful Rooms Where Children Can Bloom*. Peterborough, NH: Crystal Springs Books.

### References

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**Written By: Laura Crowley, BA ECS(hons) MA Ed(Open)**