Children's Services and Skills Directorate
SEND 0-25 Service
Specialist Inclusion Support Service
Social, Emotional and Mental Health Team

Solihull Metropolitan Borough Council

Supporting Sensory Differences

What are our senses?

We all constantly receive information from our eight senses. These are:

Sight - input received from our eyes - our ability to see as our eyes focus and detect images of visible light and generate electrical nerve impulses for varying colours, hues, and brightness that the brain processes.

Smell - input from our nose - our olfactory system which begins in our nose detects the scent and transmits signals to our brain to enable us to process the smell.

Taste - we detect tastes through our taste buds that are concentrated on the upper surface of the tongue. There are five basic tastes: sweet, bitter, sour, salty and umami.

Hearing - Hearing is the ability to perceive sound by detecting vibrations through an organ such as the ear. As with sight, auditory processing relies on how the brain interprets, recognises and differentiates sound stimuli.

Touch - Our sense of touch results from activation of receptors, generally in the skin including hair follicles and a variety of pressure receptors respond to variations in pressure (firm, brushing, sustained, etc.). These are spread through all major parts of our body and when activity in a sensory receptor is triggered this signal eventually passes to an area in the brain uniquely attributed to that area on the body and this allows the processed stimulus to be felt at the correct location.

Vestibular - The vestibular system is our movement and balance sense and it is detected by the small hairs in our ears. Examples of the vestibular system in practice include knowing you are moving when you are in a lift, knowing whether you are lying down or standing up and being able to balance along a beam. You may have experienced times where this has gone wrong, such as feeling dizzy when you have an ear infection.

Proprioception - This sense is very important as it lets us know exactly where our body parts are, how we are positioned in space and to plan our movements - skills essential for being able to write and move through our environment.

Interoception - This is our sense for our internal body sense, helping us to know things like if we have a full bladder, if we are hungry, how fast our heart is beating or how warm we feel.

Sensory Processing Differences and Difficulties

Sensory processing refers to the way our nervous system receives messages and information from the senses and turns them into responses. Although it is perfectly typical for different people to have different sensory preferences, sometimes differences in the way we process sensory information may cause significant difficulties and impact upon our ability to take part in daily life. Some people may be oversensitive to sensory input, under sensitive to input, or sometimes both. Often we may see signs of these difficulties through a person's behaviour but they are sometimes tricky to spot.

How would I know if a child has some Sensory Processing Differences or Difficulties?

Of course all children are different but here are some of the signs that a child may be experiencing some differences with their sensory processing. It is important to note that some of these signs may occur for other reasons too and, although they are differences, they do not necessarily mean that we should worry.

I hate having my hair brushed, washed or cut.

I complain about tags or seams in my clothing.

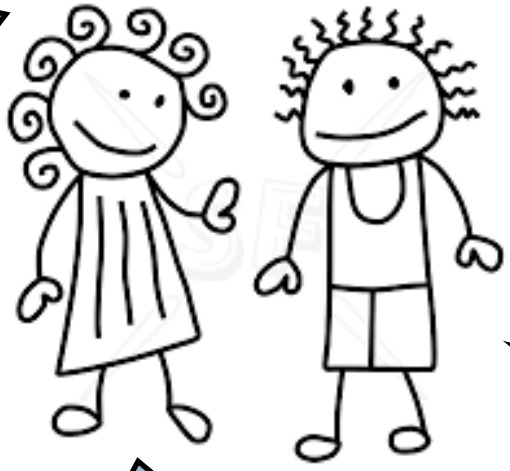
I have selective hearing or difficulties with listening.

I am a picky eater and will not try new tastes or textures.

I always walk on my tiptoes.

I seem to be unaware of normal touch or pain and I might touch others too hard or too soft.

I have poor gross motor skills and might find it tricky to run or ride my bike.



I hate being tickled or cuddled.

I am overly sensitive to loud sounds like hand driers and vacuum cleaners.

I have trouble with focus and concentration.

I am always smelling people, food and objects.

I chew on lots of things.

I have poor fine motor skills and find handwriting and cutting difficult.

I sit with my legs in a W position.

I have difficulty getting dressed .

If a child has sensory processing difficulties it means that their brain finds processing all of the information that it receives from the senses tricky and they may find that they get disorganised, confused and anxious. They can sometimes over react to sensory information and sometimes they might not react enough. This can make it difficult for them to function at school, in public and even at home if this is the case then we might decide to look for further support.

How can I find out whether a child has Sensory Processing Differences and Difficulties and what types of difficulty they may have?

It is important to try to find out about a child's sensory processing difficulties before trying to support them. This is because they may need different support strategies depending upon what type of difficulty they may have.

One of the best ways to find out about these and the support that you can give is by arranging for a member of the Specialist Support Service to undertake a preliminary assessment. This involves working with both school and family and involves completing a "Short Sensory Profile" or other sensory checklist. Following this you will receive advice about how your child can be supported with their needs and, if it is felt their difficulties impact significantly upon their daily life, you may be advised to make a referral to request further assessment and support from the Paediatric Occupational Therapy Service.

In the interim here is how you can begin to spot what kinds of sensory difficulties a child may have and how you can start to support them.

Watch the child play What do they enjoy and seek out to feel happy? Do they jump and bounce a lot? Do they sing? Do they enjoy water play or enjoy playing with dough? This can give us clues about what sensory stimuli they find pleasurable and what they may avoid.

What does the child do to stimulate themselves? Do they rock, spin, make noises, wave their arms etc? If a child feels under stimulated they can often seek out movements to help them to feel more regulated - for example they often jiggle or repeatedly fiddle with things. Be mindful that these can also be signs of boredom/disengagement/anxiety/pain (like a non-verbal headbanging due to toothache) etc., particularly for children with SEN if they do not know how to access other activities or other activities are inaccessible to them.

When they become upset what do they do? Do they hit out, throw, bite, bang things or do they hide, curl up or get into small spaces? Again be mindful as these can be signs of learnt behaviour such as trying to get attention or avoid an activity.

How do they calm themselves? Do they rock, chew, suck things, hum etc.? These can give us clues to what kinds of stimuli our children need to help them to feel calm again - and from this we can provide support for them at times when they are upset.

What can we do to support children and young people with sensory differences and difficulties?

When considering how to support a child or young person with sensory differences and difficulties we need to be sure that they do indeed need their differences to be supported. It is normal for children to have sensory preferences which can fit into their daily lives and we merely just need to understand. However if the differences cause difficulties with taking part in daily life or cause harm or distress we may need to consider how we effectively support the child.
There are several approaches to supporting sensory differences which the Council for Disabled Children describe in their useful publication - "Sensory Differences and Approaches to Intervention"
(see : https://councilfordisabledchildren.org.uk/help-resources/resources/sensory-differences-and-approaches-intervention)

Performance or Goal-Oriented Sensory Approaches
The intention of these approaches are to support a child's difficulties by managing them rather than changing them.
They include:

- Identifying the child's sensory strengths and differences.
- Adapting the environment around the child to support them.
- Modifying the tasks that we give to a child with their differences in mind.
- Helping a child to develop their own strategies to help to manage their own sensory needs.

Evidence suggests that "helping a child or young person to develop self-management strategies can be successful in enhancing performance and participation (Dunn et al 2012) and performance orientated approaches support a better fit between the young person, their environment and the task (Rodger et al 2010).

Such 'top down' approaches which focus on improving functional activity performance and participation have been identified as the most effective interventions (Novak and Honan 2019)."

Sensory based interventions

These interventions are based on the idea that a systematic provision of sensory stimulation will improve the way the nervous system interprets and uses sensory information. These approaches can be carried out by parent, carer or teacher and therefore can fit into daily routines as part of a "sensory diet".

Evidence of the effectiveness of sensory strategies is limited but you may find that strategies suggested in the pages that follow may provide a positive impact upon a child when used as part of their support strategies at home or at school.

Activities in this booklet:

The activities that appear on the following pages are suggestions to how we can adapt a child's environment to help them to manage their differences, ideas that we can use to help them to gain ways of managing their own differences, and ideas that we may be able to use in interventions such as provision of a sensory diet. (See later in this booklet for more information about sensory diets.) As previously described there is no evidence base that shows that these ideas make a significant difference but they may help the child you work with or their parents.

Examples of activities that may support a child with sensory differences..

Precautions:

Effort should be made, as previously described, to determine what kinds of differences or difficulties a child is experiencing and appropriate activities chosen with care as what will support one child might overstimulate or upset another. Encourage the child to take part in the activities which are suggested. Avoid being too forceful or directing and remember to be vigilant for signs of discomfort or distress. Try to make sure that the child feels in control of their taking part in the activity. If appropriate you could reflect on the activity with the child about how it led them to feel so that they can start to gain strategies to manage their own differences and remain regulated and as settled as possible.

Sight:

Here are some activities that can support children with visual related sensory processing difficulties. NB: Always seek the support of an optician if you have any concerns about a child's sight.

Visual Avoiding - over sensitive to visual stimuli

- Reduce clutter in the environment.
- Be aware of patterns in the environment - including those made by things like slatted blinds.
- Give a chance for eye breaks
- Provide sensory retreats - maybe a darkened tent.

Visual Seeking - seeking visual stimulation

- Flashlight tag
- Light Table activities
- Sensory bottles—like the one on the picture. You can see more online.
- Alphabet I-spy
- Mazes
- Drawing, painting and gluing.

Smell:

- Be aware of strong smells like air - fresheners, cleaners and perfumes and the effect that they may have on a child who is sensitive to smells.
- Be aware that the child may detect a smell that you yourself can't - for example foods that you may have eaten, smells in the environment for example if the classroom is near a bathroom or kitchen.
- If a child finds any smells particularly calming use this to very gently scent the environment.

Taste:

- Be aware of strong flavours and the texture of foods.
- Make a range of foods available if you are able, encourage children to explore them and try them, but do not force them in any way or turn eating into a battle.

Hearing:

NB. If you have any concerns about a child's hearing please seek professional medical support and advice as soon as possible.

Sensitivity to the volume of noise

Some children can be over sensitive to the volume of sound in the environment and dislike loud noises. Sometimes, however, children might be able to tolerate loud noise on some occasions and not at other times. This is often due to the level of control that they feel they have over the sound and whether they know what the sound is or not. For example some children will hate going to a disco but love making lots of loud noise themselves.

For these children being able to work and relax in quiet environments, where there are no sudden loud noises, may be ideal. If loud noises are expected ,for example the school bell or in the dinner hall, a pair of ear defenders or carefully selected ear plugs may be helpful.

Auditory Filtering:

Some children may have difficulties whereby, although their hearing may be normal, they struggle to process auditory/ heard stimuli appropriately. Some may, for example, hear all sounds in the environment around them with equal importance and struggle to know which to focus upon or how to focus upon it. This is known as "auditory filtering difficulties".

This can make it difficult for them to;

- understand speech – particularly if there's background noise, more than one person speaking, the person is speaking quickly, or the sound quality is poor.
- distinguish similar sounds from one another – such as "shoulder versus soldier" or "cold versus called".
- concentrate when there's background noise – this can lead to difficulty understanding and remembering instructions, as well as difficulty speaking clearly and problems with reading and spelling.
- enjoy music.

To support these children we need to be aware of the amount of different sounds that there may be around them at any time - even quiet sounds like ticking clocks, humming projectors, noise from nearby rooms or outside may cause difficulty.

To support children with these difficulties we should be aware of room acoustics and how it can affect a child's ability to hear. Rooms with hard surfaces will cause echoes, so rooms with carpets and soft furnishings are best. We should also switch off any radios or televisions and move away from any noisy devices, such as fans.

Teachers and parents also need to make sure that they;

- Get the child's attention and face them you before they talk.
- Speak clearly and at a normal pace (not too fast or too slow).
- Emphasise your speech to highlight the key points of the message.
- repeat or rephrase the message if necessary after allowing the child appropriate processing time.
- Try not to cover their mouth when talking to them.
- Try not to use long sentences when they talk.
- Use pictures to support understanding.

Touch:

Some children can be over or “hypersensitive” to touch stimuli whilst others can also be under or “hyposensitive” which can lead them to being “sensory seeking”.

If a child is hypersensitive to touch stimuli we can best support them by minimising their exposure to the touch that causes them discomfort where possible.

Children with hyposensitivity can often be seen to seek tactile input. This helps them to feel settled and secure. We can support these children by giving them activities or stimuli that they enjoy and that will calm them.

Examples could be:

Water Play

Make and play with dough.

Snuggling in blankets

Finger or hand painting and printing

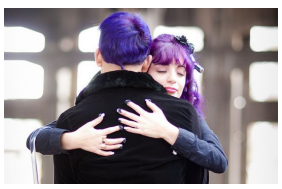
Using fidget toys.

Hand Massages

Sand or mud pies

Stroke and snuggle cuddly toys.

Pans of dry rice or lentils - maybe a treasure hunt!



Hugs

Collections of objects or treasure to play with.

Deep Pressure—for example cushion sandwiches. Or a weighted blanket or lap pad

Vestibular:

As with most sensory input children may over or under sensitive to vestibular input and therefore be vestibular avoiding and fearful of movement based activities, or vestibular sensation seeking where they cannot sit still and need to be in constant motion.

Here are some vestibular activities that may help vestibular seeking children:

⇒ Swinging
⇒ Riding on bikes or trikes or similar
⇒ Jumping on a trampoline
⇒ Spinning
⇒ Hanging upside down

A children's play park is an ideal place to visit.

Proprioceptive:

Activities that may support children with proprioceptive sensation needs;

Stretching

Chewing

Crashing onto bean bags or crash mats

Air Cushion

Resistance Bands

Sucking and blowing

Outdoor work / Gardening including sweeping, and raking.

Squeezy Ball / Stress Ball

Hit, kick, bounce or throw a ball.

Sensory Diets

Children with sensory processing difficulties may respond positively to having a "sensory diet" where activities that support their sensory needs are planned into their daily routine.

This should be done with professional support if possible but to begin to plan a sensory diet you should use your observations as above to;

- Identify your child's sensory preferences - what calms them, what alerts them, what do they like and what do they avoid?
- Use these preferences to plan sensory activities into the daily routine that may help to calm and organise the nervous system and help the child to remain regulated and happy throughout the day.

Sensory Trails or Paths

Some schools find that putting together a "sensory path" in their playground or corridors is supportive of children who seek movement to support them to regulate their feelings. These can be sometimes be quite complex or as simple as using coloured tape to create lines and symbols to represent each action that you would like a child to complete. A quick online search for Sensory Paths will reveal a wealth of ideas and information about them and how to create one of your own.

Here are some examples.

References and suggested further reading;

Council for Disabled Children : helpful in summarising the evidence base around sensory processing interventions:

https://councilfordisabledchildren.org.uk/help-resources/resources/sensory-differences-and-approaches-intervention

Quoting;

- Dunn W, Cox J, Foster L, Mische-Lawson L, Tanquary J (2012) Impact of a contextual intervention on child participation and parent competence among children with autism spectrum disorder: a pre-test, post-test repeated-measures design. American Journal of Occupational Therapy, 20(3), 162-173
- Rodger S, Ashburner J, Cartmill L, Bourke-Taylor H (2010) Helping children with autism spectrum disorders and their families: are we losing our occupational-centred focus? Australian Occupational Therapy Journal 57(4), 276-280.
- Novak I, Honan I (2019) Effectiveness of paediatric therapy for children with disabilities: A systematic review. Australian Occupational Therapy Journal Jun; 66(3):258-273.

Bill Nasen MS LLP - Sensory Diet - Helping Children to feel calm, alert and organised.

The Out-of-Sync Child and The out-of-sync child has fun - Karol Stock Kranowitz

This booklet has been created by the Solihull Specialist Inclusion Support Service's Social, Emotional and Mental Health Team in conjunction, with thanks, to the Solihull Children's Community Occupational Therapy Services and SISS Autism Team.

Activities in this booklet are suggestions and care should be taken when trying activities. Parents and Schools should always refer to professionals for support if children's sensory differences are causing significant difficulties for the child and their ability to carry out their daily life.

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