A Guide To Making Sense Of Our Eight Senses
(Plus An Overview Of Sensory Processing Disorder)

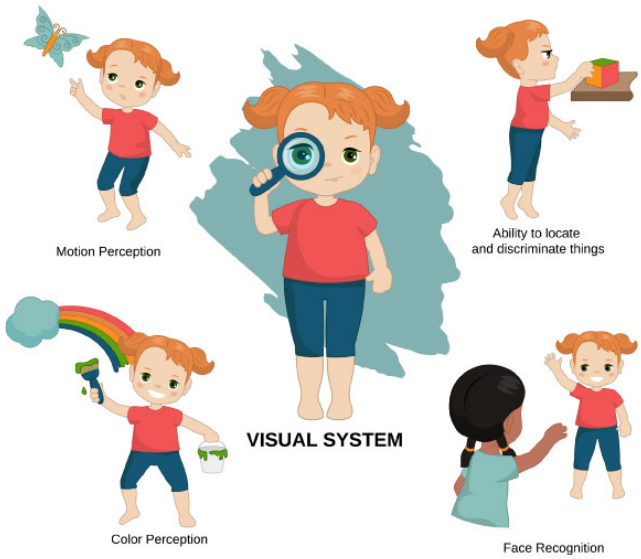
There are at least eight senses; five that we can all think of, sight, hearing, smell, taste and touch, as well as three that we might not know so much about, vestibular (balance and movement), proprioception (body awareness), and interoception (awareness of what's happening inside the body).

This article explores all eight senses, and provides us with practical ways to learn about them with our own children, or with children we care for in a club or group, as well as thinking about what Jesus did when he met people with sensory impairments or how he and the disciples responded to their own senses.

Sight
One of our senses is sight (or vision). Some children or leaders may have never been able to see (sometimes referred to as 'blind'), have experienced partial or full sight loss, or have a visual impairment.

To simulate partial sight or vision loss, try the different pairs of simulation glasses in the Vine (Visual Impairment North East) Simulation Pack. Each one simulates a different form of sight or vision loss *(refer to the booklet for details)*.

Visit the website, https://vinesimspecs.com/index.php for how to get a pack.



If we have a child or leader in our group who is blind, has experienced partial or full sight loss, or is visually impaired, think about how we can actively include them.

- Make sure you speak to them regularly, clearly, and confirm that they understand. Use their name.
- If appropriate, provide resources in large print, or braille. Use large, clear, print for presentation slides etc. Ask them what resources they need and provide them.
- Ensure there are no obstructions, protruding signs, trip hazards, glass doors without signs etc.

What did Jesus do?

Remember when Jesus encountered Bartimaeus, a man born blind, on the road to Jericho? *(Mark 10:46-52)*

When Bartimaeus was brought before him, Jesus didn't assume what Bartimaeus wanted, but said *"What would you have me do for you?"*, giving him the dignity of allowing him to ask. There is a good example for us all to follow; never assume, always ask.

Hearing

One of our senses is hearing. Some children or leaders may have never been able to hear (sometimes referred to as 'Deaf') or have experienced partial or full hearing loss (sometimes referred to as 'deaf').

To simulate partial hearing loss, put on some ear defenders and try to have a conversation with someone… it's hard isn't it?

If we have a child or leader in our group who is 'Deaf', 'deaf', or has experienced partial hearing loss, think about how we can actively include them:

- Do they use sign language, and if so, can we learn how to communicate with them in this way? Make sure we use the same sign language as they do e.g. British Sign Language (BSL), Makaton, American Sign Language (ASL) etc.

- Do they lip-read? Make sure they can see our faces when we speak to them.

- Could we make what we do more visual to help communication be more effective?

What did Jesus do?

Remember when Jesus encountered a man who was Deaf, and who couldn't speak, near Decapolis? *(Mark 7:31-37)*

Jesus was asked to heal the man, but rather than doing this in front of everyone, making a spectacle out of it, he took the man to one side, away from the crowd, and there he healed him. Another great example from Jesus of how to treat people with dignity and respect.

Smell

One of our senses is smell. Some children or leaders may experience sensory overload when there are strong smells around.

Sensory Processing Disorder can mean that children or adults have under-developed or over-developed senses, including smell.

To test our sense of smell, get a set of 12 essential oils that you can try to identify through smell. Can you tell which is which?

OLFACTORY SENSORY SYSTEM

Ability to smell pleasant and unpleasant odors

The list of 'smells' in our pack is Rosemary, Frankincense, Bergamot, Eucalyptus, Tea Tree, Lemon, Lavender, Sweet Orange, Peppermint, Cinnamon, Grapefruit, Sandalwood

What did Jesus do?

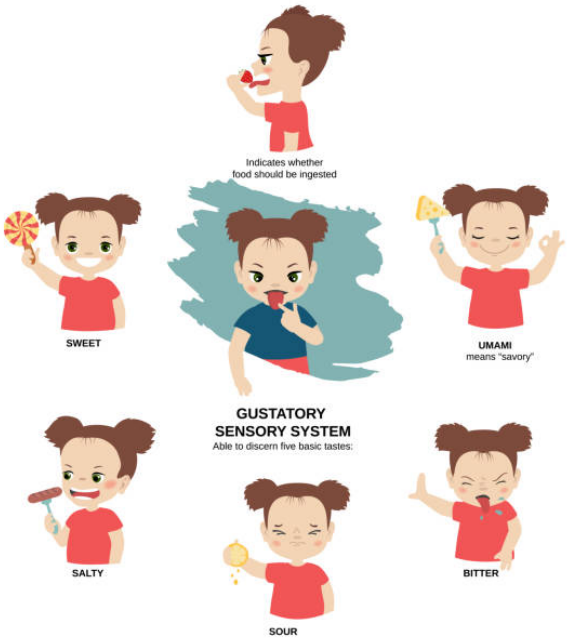
Remember when Jesus had his feet anointed in pure nard by Mary the sister of Martha, so that the fragrance filled the whole house? *(John 12:1-8)*

Judas Iscariot criticised this act, objecting to the cost (as he stole from the money bag), but Jesus rebuked him and accepted the act of humble worship. Everyone can worship God, and whether they have a disability or not is no barrier. We should encourage all to worship in ways that feel right to them.

Taste

One of our senses is taste. Some children or leaders may resist certain tastes, or may seek out certain flavours. Some may put non-food items in their mouths.

Sensory Processing Disorder can mean that children or adults have under-developed or over-developed senses, including taste.



To test our sense of taste, try three different types of Haribo's, sweet, sour, and salty, that you can try to identify through taste. Which do you prefer? Can you tell which is which?

What did Jesus do?

Jesus said that believers are *"…the salt of the earth." (Matthew 5:13)*

But he went on to say that if we lose our 'saltiness', our Christian 'flavour', then we are useless to the Kingdom; no good for anything. This doesn't mean that someone who lacks the sense of taste is useless, but rather that just as salt brings out the taste in food, so believers should use what we've been given to bring flavour to the lives of others.

Touch

One of our senses is touch. Some children or leaders may seek out certain touch sensations and find them enjoyable.

Sensory Processing Disorder can mean that children or adults have under-developed or over-developed senses, including touch, which can sometimes mean they do not feel pain if injured, or can easily burn themselves without realising.

To explore our sense of touch try three different types of sensory touch experiences with your group, e.g.

- Gelli Baff
- Water Beads
- Putty Slime



What did Jesus do?

There is much we can learn from Jesus and the gift of touch. Jesus intentionally used tactile methods in most of his healing miracles *(e.g. a man with leprosy in Luke 5:12-13)*, as well as in his encounters with many other people.

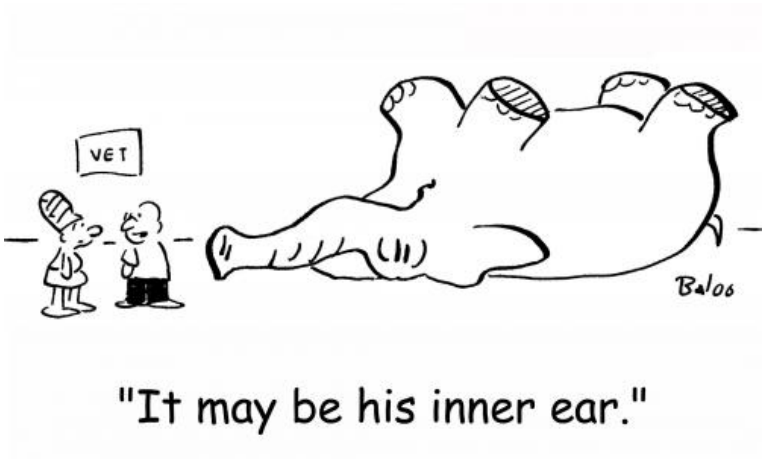
He showed us by example that touching someone that society usually rejects or avoids is powerful, both through the restorative power of touch as well as the message that the act of touching someone, that nobody else will, sends to others. We don't categorise people as 'clean' or 'unclean' so much today, but we still act in a similar way towards people with disabilities, illness, or deformities, for example. Jesus showed us a better way. *(Note: Always seek permission before you touch somebody!)*

Vestibular

One of our senses is our 'vestibular' sense, or our sense of balance and movement. It helps us to know what way up we are, whether we are moving or still, how to experience gravity, how to maintain a position without falling. Each of us has vestibular organs situated deep within our ears and when we move our heads the fluid in these organs moves too, providing us with information about the position of our heads and bodies.

Our vestibular sense works alongside many of our other senses including proprioception (see below), sight, hearing etc. to help us feel more confident about moving in, and interacting with, our environment.

Some people can have under responsive (hyposensitive), or overly responsive (hypersensitive), vestibular systems which can mean, for example, that they either need to move constantly to get the sensory input that they need, or can be fearful of movement as they feel unbalanced and might fall.



A child or young person with an under responsive vestibular system might constantly fidget, rock in their chair, or need to spin, hang upside down, or move around rather than sitting still. A child with an overly responsive vestibular system might be unwilling to take part in physical games, or to climb, or be wrongly labelled as 'lazy'. They are also more likely to get travel sick.

Understanding these aspects of our vestibular system can help us to understand and accommodate the needs of a child or young person with an under or overly responsive vestibular system, allowing us to put strategies in place to support them.

Don't dismiss the child with an under responsive vestibular system as naughty, they have an inner need to move, so provide that means for them. They might find it easier to sit (and bounce) on an exercise ball rather than on a chair, or to sit on a wobble cushion, or to stand on a balance board. Likewise, include the child with the overly responsive vestibular system who might prefer to sit still and be the referee or scorer in a hectic physical game.

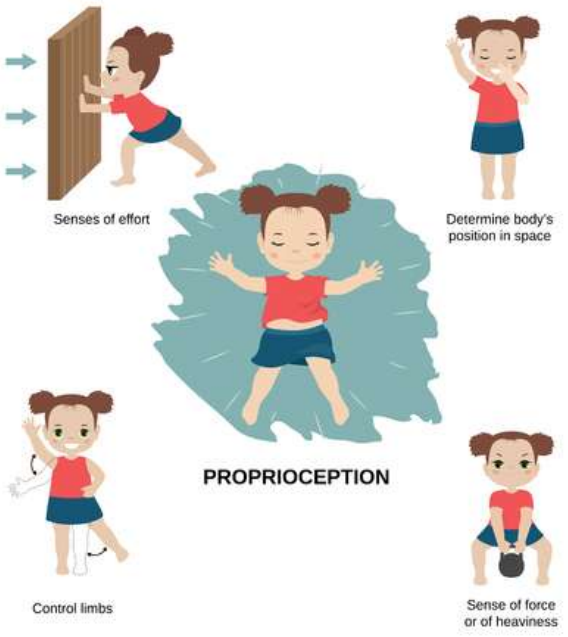
What did Jesus do?

Remember when Jesus and the disciples were in the boat when the storm came up? (Mark 4:35-41)

The boat was being tossed around everywhere and the vestibular systems of everyone on board would have been struggling! Jesus rebuked the wind and the waves and said "Be still!" and there was calm. Sometimes we need to help children and young people who are struggling with their vestibular systems to be still, while in other cases we need to help them to move!

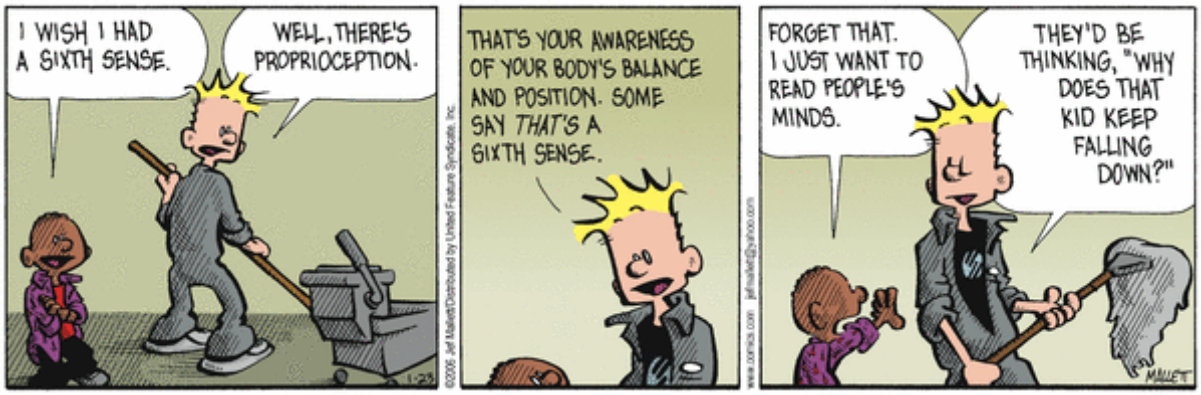
Proprioception

Another of our senses is our 'proprioceptive' sense, or our sense or 'awareness' of our body's position in our environment or space. It is the way that the receptors in our muscles and joints send messages to our brains to help us understand about our bodies positioning, movement, coordination etc. It helps us to focus our movement appropriately, for example knowing that we need to apply more force when lifting a box of paper than we do when picking up a single sheet. It helps us know where our nose is if we try to touch it even with our eyes closed!



Our proprioceptive sense works alongside many of our other senses including vestibular (see above), sight, touch etc. to help us feel more confident about moving in, and interacting with, our environment. Whenever we go upstairs, carry something, stand up, sit down, bend over or stretch, we are using our proprioceptive system.

A correctly functioning proprioceptive system allows a child or young person to, for example, write with a pencil without breaking it, or to play in a coordinated and balanced way, not being too rough or too gentle.



If a child or young person's proprioceptive system isn't functioning as it should, they may seek additional input to their muscles and joints to help them to regulate themselves, or may actively avoid this. Proprioceptive seeking behaviours might be through rough play, or through jumping, stamping or even running into walls. Another term to describe them can be the 'Bumpers' and 'Crashers' as they seek to give themselves that additional input. It might also include kicking, biting or hitting out at others, chewing non-food items etc.

Proprioceptive avoiding behaviours might include avoiding physical activities like running, jumping or climbing, preferring sitting still, avoiding touch, and being a picky eater. Even though these two groups of children might seem total opposites, they both need proprioceptive input to help them either 'calm' or 'wake up' their system and reach their 'optimum' level of functioning, i.e. the level they work best at.

Understanding these aspects of our proprioceptive system can help us to understand and accommodate the needs of a child or young person with an unbalanced proprioceptive system, allowing us to put strategies in place to support them. For example, providing a range of physical activities through 'activity breaks' that meet the needs of all the children such as through movement, applying pressure, stretches, walks, or even just some playdough to squeeze, can make a big difference.

You can do this subtly by including 'opportunities to serve' into a programme; going on a litter pick, helping some elderly people with their gardens, doing some shopping etc. all can have positive proprioceptive properties.

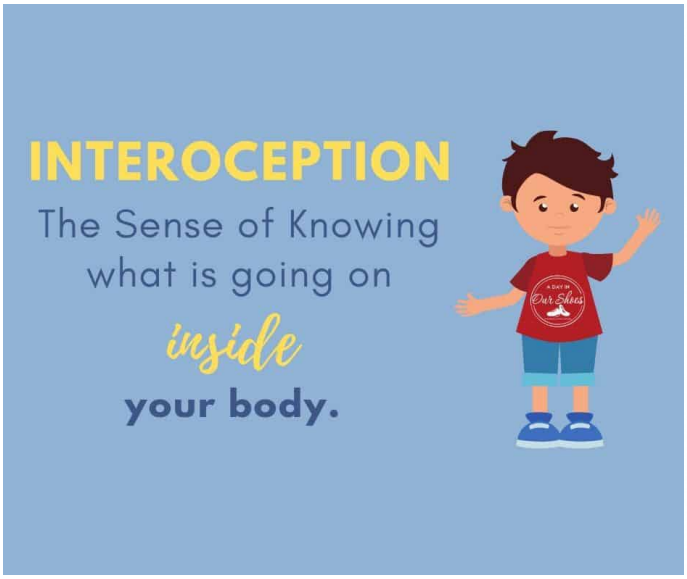
What did Jesus do?

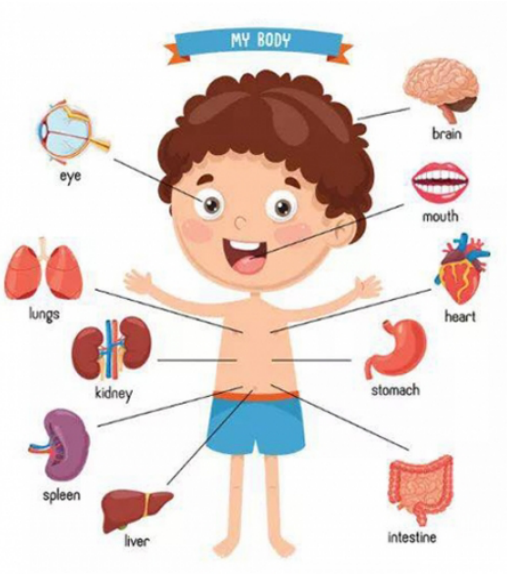
Jesus was always on the move; we often see a story about Jesus that starts with him travelling to or from somewhere, and all of these journeys would have been by foot. One example is when Jesus and his followers were on their way back from Jericho and they encountered Bartimaeus (Mark 10:46-52).

Jesus usually took the disciples with him, so they would have had lots of proprioceptive input too from the walk, from carrying things with them, from the jostling of the crowd! We can learn from his example, and not always just sit in our churches when we meet with the children or young people… take them on a walk!

Interoception

One of our senses is our 'interoceptive' sense, or our sense of internal 'feelings'. Receptors in our muscles and joints tell us where our body parts are, that's the basis for our proprioceptive sense (see above). Interoception is a similar concept; just as there are receptors in our muscles and joints there are also receptors inside our organs, including our skin. These receptors send information about the inside of our body to our brain.





This information helps the brain to regulate our vital functions such as body temperature, hunger, thirst, digestion and heart rate. Interoception helps us to understand and feel what's going on inside our bodies; for example we need to know if our heart is beating fast, or if we need to breathe more deeply, and we are able to tell if we need to go to the toilet, or if we are hungry, full, hot, cold, thirsty, feeling sick, itchy or ticklish.

If a child or young person's interoceptive system isn't functioning as it should, they may be unaware that they need the toilet until it is too late, or may keep eating beyond the point of being full. They may be putting their coat on when everyone else is sweltering, or be wandering around in a t-shirt in the middle of winter.

There is some correlation between our interoceptive sense and our emotions too… how we 'feel' is more than just about our physical state. We have sometimes unexplainable feelings about places, or people, or certain situations, that can be positive or negative; it is possible that these feeling are linked to our interoceptive system too.

For example, when we experience danger, our heart rate increases, our breathing shallows, our muscles tense; not recognising these changes may cause us not to be fearful, putting us in greater risk of harm. There may also be a link between our interoceptive systems and the sense of peace that our faith can bring us.

"My gut instinct turned out to be indigestion"

Helping children and young people to regulate their interoceptive system might be as simple as reminding them to visit the toilet, or helping them to manage how much they eat or drink, or checking that they are dressed appropriately. Even just giving them a snack mid-morning, for example, can help children to focus. But it might also be about being sensitive to how they respond to people, places, and situations; sharpening our own awareness of these things so that we can support them better. By helping them to be comfortable and secure in this way, we help them to be more receptive and open to hearing about and experiencing God because then nothing else can get in the way!

What did Jesus do?

Jesus experienced all of the interoceptive feelings that any of us can; he experienced hunger as he fasted in the wilderness (Matthew 4:1-4), he experienced thirst on the cross (John 19:28), he experienced strong emotions in the Garden of Gethsemane (Luke 22:44).

There is no feeling that we can experience that Jesus hasn't himself experienced; he understands everything that we can feel, and more, and longs to help and support us as we experience these feelings too.

An Overview Of Sensory Processing Disorder (SPD)

What is a sensory processing disorder? Occupational Therapist Sheilagh Blyth explains…

(Article adapted from the original to fit this guide, along with additional content from Steff Shepherd, qualified Occupational Therapist and children's worker, and with excerpts included from Sue Allen's book, 'Can I tell you about Sensory Processing Difficulties?', highlighted in blue below):

Sensory processing (sometimes called sensory integration or SI) is a term that refers to the way the body receives and interprets messages from the senses. Humans have a multitude of senses that help them to gather information about the world around them and people process this information through the nervous system.

This tells an individual to react either with a motor or a behavioural response. For example, if a butterfly touches someone's arm, the brain would receive a message that they could either feel or see that butterfly. How a person reacts to that sensation is dependent on how their body interprets sensations. They could brush the butterfly to one side, scream, wave their hands in the air or stand still in fright. Everyone's reaction can be different.

Sensory integration usually occurs automatically and unconsciously without any effort. Someone with a difficulty may have a sensory processing disorder (SPD).

A child with SPD may have reactions which can be difficult to understand and explain. Their body is automatically reacting to what is around them by being in a 'fight' or 'flight' mode, and this can be wrongly interpreted as bad behaviour. Every day these children may feel overwhelmed, anxious, depressed, or appear aggressive.

Adults will often describe these children as being a fussy eater, emotional, stubborn, fearful, disruptive and uncooperative.

These children may find it difficult to make friends, to sit still in class, or to work as part of a group. They may appear disorganised, or find certain clothing or clothing labels difficult to wear.

"Hi. My name is Harry and I have sensory processing difficulties. Some people call it SPD and others call it sensory integration difficulties. Seeing, hearing, touching and smelling tell us about the world around us. Movement, muscles senses, stretch and touch on our inside tells us about how our body is working and moving. Senses help us to know where we are, to know what to do and how to do it. For me those messages get in a muddle. This makes it tricky to pay attention, do my school work and even play with my friends. To me it can be annoying, but there are ways that I can make life easier and more fun."

"I sometimes feel like my senses are crowding in on me and sound is too loud, touch is too scratchy, and lights are too bright. This makes me feel stressed. I just want to go somewhere quiet and not talk to anyone. My sister is called Anna. She has some sensory processing difficulties too. She misses what people say or her hands don't tell her what they are touching or holding. Teachers can get cross because they think she is not listening when she is really trying. She has to look at her hands to know what they are doing. It helps us both to do warm-up exercises (like bouncing on a mini-trampoline) before we have to pay attention, do school work or even get dressed or go to sleep."

Children usually present with three different types of responses to sensations: under-react, sensory seeking and over-react.

- Children who appear to under-react may appear withdrawn or be difficult to engage in an activity, they are watchful children.
- Sensory seekers need to activate their senses any way possible. This may be by wandering around the room (appearing to be uncertain and bored), swinging their feet or tapping their fingers, twirling their hair, biting their nails, tapping their pencil, or clicking their pen.
- Children who over-react may appear to be excessively emotional in response to events.

With (at least) eight different senses, three different ways of reacting, and every child's response being unique, there is no one solution. Parents/carers or leaders can help by noticing if a child needs a quiet place to go to if there is too much noise. If a child gives firm bear hugs, this would suggest they like to feel deep muscle pressure. In that case a light touch or tap on this child's shoulder to get in line at school or church could be an unpleasant sensation and could scare them into an overreaction. If a child is constantly fiddling, fiddle/fidget toys could help their concentration and focus.

Everybody's sensory preferences are unique to them. No one else can tell you how you feel inside but your nonverbal communication will give other people clues. First of all, think about how you look and feel when you are happy and relaxed, or stressed or angry. Then think about how you recognise that in other people and your child/the child you're working with. Practice reading those clues and thinking what the sensory qualities of that experience or environment are.

Understand – All of us have different sensory preferences and tolerance levels for sensory information. Sensory processing difficulties cause stress to children and to their families. They make the things that we do every day more challenging. They will impact on children's learning styles. They are hard for other people to see and understand. Games that involve only visual demonstration (e.g. copying a sequence of movements) or only verbal instructions (e.g. 'Simon Says') will give you a starting point to identify their preferred or best learning strategies. Encourage children to be aware of what works best for them but also practice different strategies.

A busy environment can be overwhelming for children with sensory processing difficulties. Those who over-respond to sensory information are likely to have increasing difficulty as the session/class progresses, showing signs of tiredness or stress. Look out for children who demonstrate 'fight' or 'flight' responses to sound, visual, touch or even movement stimuli. This may include covering ears or hiding when a bell goes, or hitting out when brushed against by other children. They may avoid sports, especially when feet are away from the ground or where backwards and rotational movement is required. Under-responders appear switched off or do not appear to notice stimuli; they may not notice that clothes are twisted on their body, or food is on their face, or balance may be a challenge. These children are most often missed, as they are seen as well behaved, but they can also make the most progress when offered the right sensory input.

To help a child manage their sensory processing disorder both at home and in school or church look at the activity, the environment, and the individuals around them. Ask yourself the following questions:

- Would this activity result in the child under-reacting, seeking out sensations, or over reacting? Is it calming or stimulating? If so, can it be changed? Sometimes 10 minutes on a trampoline can calm one child but over-excite another.
- Is the environment set up to help that child? Or can they opt out if they need to? A time-out card shown discreetly to a leader can help a child to leave the activity, or be offered an opt-out option while maintaining their dignity. If a child becomes scared by too much noise, is it possible to create a den or quiet reading corner in the same room so that the child can still join in but from a "safe place"? Or maybe provide ear defenders for the same reasons?
- Perhaps a child who under-reacts may benefit from sitting on a wobble cushion or exercise ball to reawaken their senses. A wobble cushion or exercise ball can also help a child who is sensory seeking to concentrate by providing the movement they are seeking.
- Are you dressed appropriately? Some children find patterned clothing, dazzling jewellery or bright lipstick too visually stimulating. Others may find the smell of perfume or aftershave too overpowering causing them to be distracted from what they need to do or learn.

Change (light) – Is the lighting comfortable for everyone? Lights that flicker can cause stress, for example halogen lighting may be preferable to fluorescent strip lighting. Can you decrease or increase lighting levels according to the activity level required? Visual movement or seeing people move while you are trying to pay attention is particularly disruptive to some children. This may also be as simple as a tree blowing in the wind seen through the window, so ask the children to sit with their backs to the window. You may wish to think about layout so that children who struggle with visual attention do not have to deal with others walking in front of them. Visually busy walls (with lots of pictures or posters) can also be very visually distracting. You might want to think about keeping one wall blank.

Change (sound) – Sound absorbing materials or quiet spaces can help over-responders. Also consider background noise and where possible consider reducing it when focussed attention on instructions is required. Under-responders will benefit from cueing-in to the need to listen, for example by simply speaking their name before each instruction that you need them to follow. You might also want to mark transitions, for example, with the use of colour on a screen or gesture cues

Change (smell) – What does the room smell like? Are any of the children bothered by the smell? Look for scrunched-up noses! Then look to clear the air in the room where possible. Smells may be from an over ripe banana in the bin, glue sticks from the craft table, or markers from the white board. Children may be distracted in seeking out the smell or distracted by the smell being too strong for their senses.

Change (activity) – Remember to take some 'activity breaks' e.g. jumping on the spot, pushing down on a chair or table, star jumps, or handshakes to increase body awareness (proprioception). This helps focus attention and organise body movement. A good time for strategies like these are before sitting, writing or listening. Have 'activity breaks' regularly throughout the session, rather than as crisis management when a child "needs to move now!"

As a child becomes older, sensory diets can be a powerful behavioural tool in helping children to respond appropriately to their senses. A sensory diet is a personalised activity plan, designed to provide the sensory input they need to stay focused and organised throughout the day. The clue is in the word 'diet' rather than 'crisis management'. Done well, it should help with attention, concentration, sensory reactions and self-regulation. The concept is that the child rates their body in relation to a car engine, if it is going too fast then you need to look at the activity to see why. The aim is to have the engine running 'just right'.

An Occupational Therapist (OT) with training in sensory processing disorders can help to devise a sensory diet and offer advice which needs to be specific to an individual child. The aim of any OT treatment is to help a child manage their own responses appropriately.

For their carers, it is developing an understanding of how sensory processing disorder can affect a child, their functioning and their behaviour. This is a key part of an OT's role; to ensure that all those working with the child *understand* their SPD and its impact.

There are many adults who have sensory difficulties, however they have learnt to manage their responses. With help and understanding these children can learn how to play with friends and enjoy school, church etc.

Sheilagh Blyth is a children's Occupational Therapist and founder of the 'Enable Me Method' which provides books, resources and courses to educators. Her article on Sensory Processing Disorder was originally published on 'The Good Schools Guide': *https://www.goodschoolsguide.co.uk/special-educational-needs/sensory/sensory-processing*

With grateful thanks to Steff Shepherd (qualified OT and children's worker), and Stella Waterhouse (specialist author) for their review and input into this document.

Mark Arnold
Additional Needs Ministry Director
Urban Saints *www.urbansaints.org/additionalneeds*

See also:

- *'Can I tell you about Sensory Processing Difficulties' - Sue Allen, Jessica Kingsley Publishers, ISBN 978-1-849-05640-3*
- *Love Surpassing Knowledge: more than ramps, understanding & implementing accessibility, Naomi Graham, 2018, ISBN 978-1-908-39383-8*
- *Sensory Processing 101, Abraham, Heffron, Braley, Drobnjak, 2015, ISBN 978-0-692-51836-6*
- *Multi-Sensory Ideas for Worship, Irene Smale, 2009, ISBN 978-1-842-91392-5*
- *Stella Waterhouse's website: http://autismdailynewscast.com/category/columns/exploring-autism/page/2/*