Sutton Health & Care
Community Services

Sutton NHS

OCCUPATIONAL THERAPY DEPARTMENT

Sensory Processing

Sensory processing is how we take in information from the environment and our bodies, make sense of it and use it appropriately. This integration allows us to know where we are and respond appropriately to sensory input. Sensory processing is a foundation for participation in school activities and activities of daily living.

We all have sensory preferences as to types of things we like and dislike, e.g. some people love loud music while others dislike it. When a child has difficulties processing sensory information, they may under or over respond to any of the seven senses. This can make it difficult for them to concentration, participate in new activities or develop skills because they don't know how to respond to their environment.

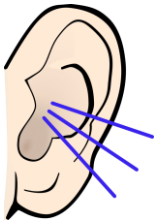
Can you imagine the label on a jumper feeling like a spiky cactus? Or having to fidget and move constantly to get a sense of where your body is? Or feeling anxious waiting for the school bell to ring every day because the sound hurts your ears? These are examples of how sensory information can be confusing for children who have difficulties interpreting sensory input.

Children who have sensory processing difficulties don't have control over how they feel or respond to sensory input. This can then stop them from doing certain activities, which can affect their skill development and affect their ability to concentrate.

We take in seven types of information, linked to sensory systems

1. Sound
2. Sight
3. Touch
4. Taste
5. Smell
6. Body awareness (Proprioception)
7. Movement (Vestibular)

Please ensure that adult supervision is given when completing these activities



Sound (Auditory Processing)

Auditory input refers to both what we hear and how we listen. The auditory system enables us to hear sounds and attend to or filter out incoming sound sensation.

A child who is over responsive to sound can be overwhelmed and even frightened by the unpredictability of common environmental sounds. They may have difficulty following directions, may startle easily and have difficulty concentrating due to focusing on every noise around them.

A child who is under responsive to sound may appear to ignore you when there name is called or, not be able to follow verbal instructions or seeks out loud noises.

Strategies that may help:

- Reduce background noise whenever possible at home and at school
- Think about where your child sits when they need to concentrate. Try encouraging them to sit away from doors and windows as this may be a distraction
- Use a multi-sensory approach and give instructions visually as well as auditory and ask your child to repeat them back to you
- Prepare your child for noisy situations ahead of time, so they know what to expect. Knowing when something is going to happen (e.g., fire drill) helps the child prepare themselves
- Before going to a loud place (shops, soft play) complete heavy work activity to help their body feel calm. Consider using ear defenders
- **Use headphones** with favorite calming music or no music at all to help calm or to restrict auditory input. The weight of the headphones may also be calming

Activities that may help:

- **Complete regular sensory strategies**: Completing heavy work and resistance activities regularly throughout the day, helps keep the sensory systems calm and ready for new or unexpected experiences.
- **Additional heavy work activities:** When you see your child begin to get disorganised, try to engage them in “heavy work” activity (animal walks or wall/ floor pushups, pushing, pulling heavy objects) and see if this helps them to stay calm and organised.
- **Provide some control over sounds:** Encourage your child to play with different sound toys, household appliances and instruments and have the control of making the sound and experiencing it. Timers and visuals can be used to increase the length of time and you can turn it into a game.

Please ensure that adult supervision is given when completing these activities

Sight (Visual Processing)

The visual system enables us to move our eyes together to view the world around us. It has an important protective role in alerting us to danger within the environment and enables us to determine, size, shape, colour and qualities of objects in the environment.

Children who have difficulties processing visual input may have difficulties with judging distances, be sensitive to bright lights, have difficulties finding clothes in drawers or can be distracted by visual input.

A child who is under responsive to light may seek out this input, such as enjoying watching spinning objects or not being aware of visual input around them. This child needs increased visual input such as writing on different coloured paper.

A child who is over responsive to light will be very sensitive and can become distressed if lights are too bright. They can be distracted by excessive visual input, such as pictures on the wall and this can affect their concentration.

Completing heavy work and resistance activities regularly throughout the day, helps keep the sensory systems calm and ready for new or unexpected experiences.

Strategies that may help:

- Use neutral colours on walls and reduce pictures/visual displays in bedrooms
- Black out blinds help with reducing string outside lights
- Be aware for reflective surfaces and light bouncing of these
- Minimise visual clutter such as keeping toys in storage boxes
- Offer sunglasses or a hat when there is strong lights
- Use a multi-sensory approach to activities

Activities that may help:

- **Use sensory strategies** regularly throughout the day to allow your child to be in a calm and alert arousal state. Heavy work and deep pressure activities are calming and organising
- **Heavy work activities:** When you see your child begin to get disorganised, try to engage them in “heavy work” activity (animal walks or wall/ floor pushups, pushing, pulling heavy objects) and see if this helps them to stay calm and organised.
- **Visual activities:** Completing visual activities to strengthen the visual systems. Try completing games such as I-spy, mazes, puzzles, dot to dots and colour by numbers.

Please ensure that adult supervision is given when completing these activities

Touch (Tactile Processing)

The tactile system is our sense of touch through different sensory receptors in our skin. It is through the tactile system that we first receive information about the world when we come out from the womb environment.

It is important when trying new tactile experiences that our body is calm and that we start with familiar and comfortable textures. Completing sensory strategies throughout the day will help with this and in particular heavy work and deep pressure activities such as massage before specific tasks such as putting on socks or shoes.

Children with difficulties processing sensory information can be over or under responsive to touch, which means they are either sensitive to it or seek it out. You may notice your child avoid messy play or doesn't when they are messy.

Completing heavy work and resistance activities regularly throughout the day, helps keep the sensory systems calm and ready for new or unexpected experiences.

Strategies that may help:

- Light touch is alerting and can be distressing, so use firm touch which is calming
- Have a quiet area available, if your child becomes over stimulated
- Always approach your child from the front
- Heavy work activities or weight baring through arms and hands e.g. animal walks prior to activity
- Allow the use of a fidget toy
- Firm hand and foot massage- encourage your child to complete this on themselves
- At bath/shower time, encourage the use of a sponge or flannel to rub firmly all over body
- Gradually increase tactile experiences in play, eating, bath time etc.
- When queuing encourage your child to stand at the front or back of the queue.

Activities that may help:

Messy Play Bags: Put messy or non-preferred textures into a zip lock bag and ensure the bag is sealed with waterproof tape so that it doesn't leak. This provides the opportunity to explore these textures without having to actually touch them, until tolerance and confidence is developed.

Tactile bag: Use a feely bag and include various textures (some your child likes and some not) e.g. wooden bricks, sponges, cotton wool. Observe your child's response and remove any textures particularly disliked but gradually reintroduce following exploration of other textiles.

Using Tools: Use tools such as paintbrushes, to allow your child to begin participating in messy play without getting messy.

Please ensure that adult supervision is given when completing these activities

Taste and Smell (Gustatory and Olfactory Processing)

The gustatory system (taste) enables us to detect and discriminate tastes and the olfactory system enables us to detect smells.

Children who are under responsive to taste or smell will need more input to register the input. They may either not notice input because it is not intense enough for them or they may seek this input out, sometimes in inappropriate ways such as mouthing non-food items or biting.

Children who are over responsive to taste or smell are often reluctant to try new foods, complete self-care tasks such as tooth brushing, dislike certain toys or activities due to the smell.

Strategies that may help:

- **Vibration**: Switch to a vibrating tooth brush as deep vibration is calming and helps to sensitize the mouth. Use it over the tongue, teeth, gums and cheeks. Make sure it's not too strong as this may over alert the child

- **Chewy tubes** or other oral sensory toys can be used to provide oral input through chewing/ biting/ sucking. This provides more oral stimulation activities and "appropriate" things to chew on; they will need to chew to feel calm and organized. Getting a chewy chews for the child to chew on in the day can help to desensitize the mouth. The child can keep the chewy tube in their pocket or have it attached to their t-shirt so that they can seek it out when required

- **Sucking** liquids through a silly straw or sucking thicker textures such as yoghurt through a straw to increase the input.

- **Facial massage** around the cheeks and lips if the child will tolerate this. The child can be encouraged to this on their own. **Do not continue** if the child shows any signs of discomfort

- Wash and wipe the child's face often during eating with different textured materials (i.e., baby washcloth, napkin, regular washcloth, paper towel with texture to it)

- **Snacks** can be used to provide varying regular input throughout the day. Change the texture, flavour and temperature to increase the amount of input received through foods

Activities that may help:

- **Games:** Try playing lots of games where your child is encouraged to blow, suck and swallow, such as blowing bubbles, whistles or playing blow football.

Please ensure that adult supervision is given when completing these activities

Body Awareness (Proprioceptive Processing)

Proprioception refers to all of the input to our muscles and joints with regards to our body positioning and how much force is required to complete activities.

Children who have difficulty with processing proprioceptive information often are unable to grade their force when interacting with peers and objects and have difficulties with body awareness and body movements. They may seek out more information about their body position, such as fidgeting, seeking movement, chewing on pens/clothes.

Completing the below heavy work and resistance activities regularly throughout the day, helps keep sensory systems calm and ready for new or unexpected experiences. Try to complete these types of activities at regular intervals throughout the day and before you think your child needs to seek input.

Heavy work activities that may help:

- Regular movement breaks involving marching or jumping/star jumps on the spot.
- Use transitions to increase sensory input by marching, jumping, crawling or completing animal walks (crab walk, bear walk, commando crawl) instead of walking.
- Push and pull activities such as helping to carry the shopping/ laundry, collecting toys in a bag or trolley, helping with housework, opening doors
- Clay/play dough activities to encourage heavy kneading, rolling, pulling, pressing through individual fingers to provide resistance through the hands and fingers.
- Hand and arm stretches (e.g. stretch your arms up high, and hold for 5 seconds and slowly lower them to the sides of your body and repeat 5 times)
- Pushing against your hands with flat palms and hold for 5 seconds and then repeat
- Wall push up's or chair "pushups" (pushing bottom off the seat using hands, feet off the ground) or "pull ups" (pulling the chair into bottom while seated with feet on the ground).
- Eating crunchy food as a snack such as carrot sticks or apples –with supervision
- Drinking through a sports cap bottle or curly straw
- Climbing activities (climbing frames and playground equipment)

Please ensure that adult supervision is given when completing these activities

Movement (Vestibular Processing)

The Vestibular system provides information related to head position and movement. It is affected by movement of fluid in our inner ear, when the head is moved into different positions. It tells us where our body is in space and how our body moves in relation to gravity, e.g. is the movement up or down. It gives us information in order to make our muscles respond accordingly to movement (e.g. prevent falls or adjust the movement of our eyes to follow a moving object). This lets us experience gravitational confidence that we can maintain our balance without falling.

Children who have difficulty processing this input can either over responsive, meaning they can be fearful of movement or under responsive meaning they need to seek out movement.

Strategies that may help:

- Completing heavy work activities before and after movement activities will help your child feel calm
- Use a wedged wobble cushion to provide movement while seated, to reduce seeking it out

Activities that may help:

- Frequent movement breaks, throughout the day
- Use animal walks and structured movement such as jumping, crawling and marching to transition to different activities or room in the house
- Yoga poses and body stretches
- Gentle rhythmic bouncing on a gym ball, with feet flat on the floor
- Jumping activities including star jumps on a mini trampoline or on the spot hopscotch. Encourage jumping to be vertical up and down in a steady rhythm
- Playground activities, such as climbing frames, slides or pumping a swing
- Catching and throwing games , using balloons and beach balls, so that it encourages different head positions, such as looking upwards and to the side
- Obstacle Courses - set up obstacle courses at the park, in the garden or in the house where the child must crawl, go under and over objects, go through
- Visual motor activities – Playing “I Spy” while on the swing, bouncing a ball while moving
- Actions songs with movement, swaying or slowly dancing to music

Please ensure that adult supervision is given when completing these activities