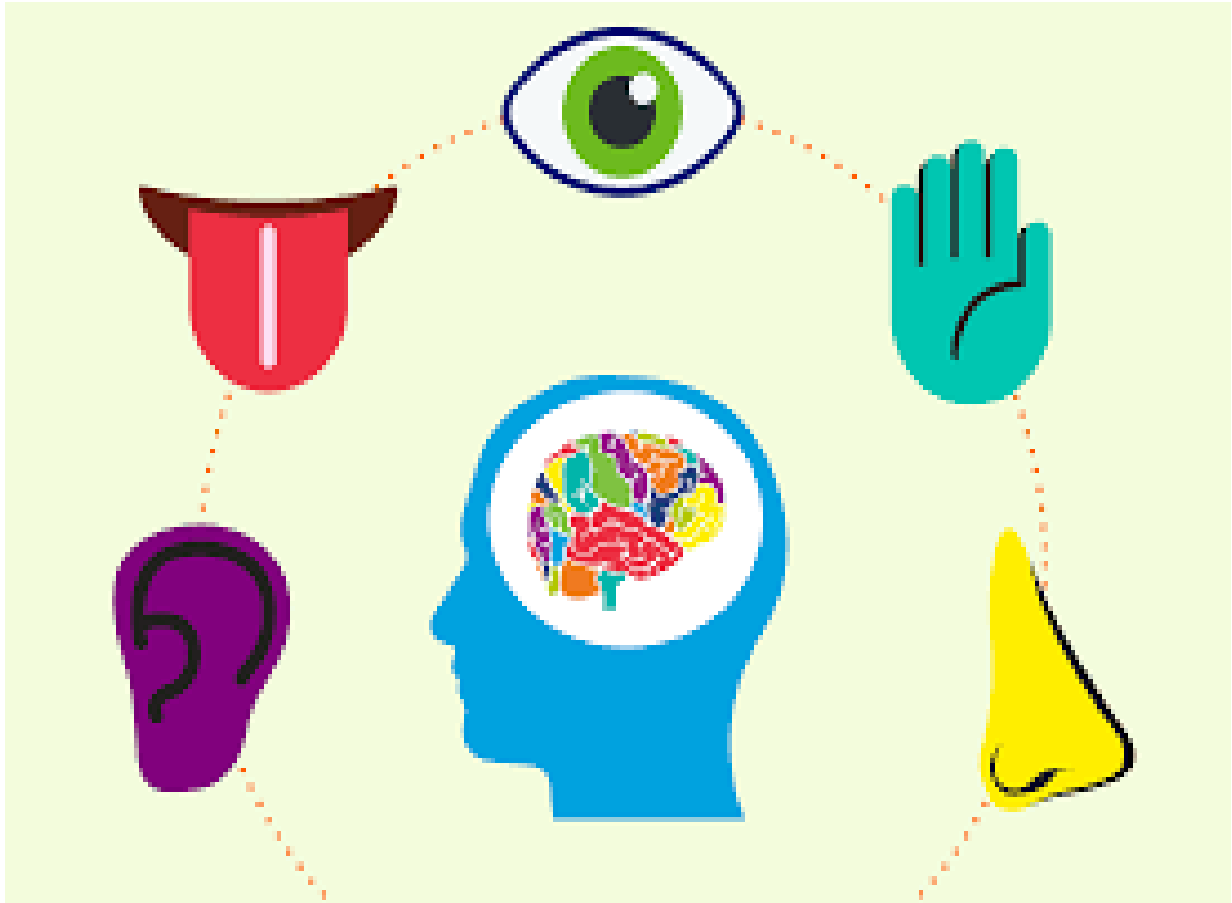


# Children's Early Years Occupational Therapy Service



## Proprioception activities ideas list

## What is Sensory processing?

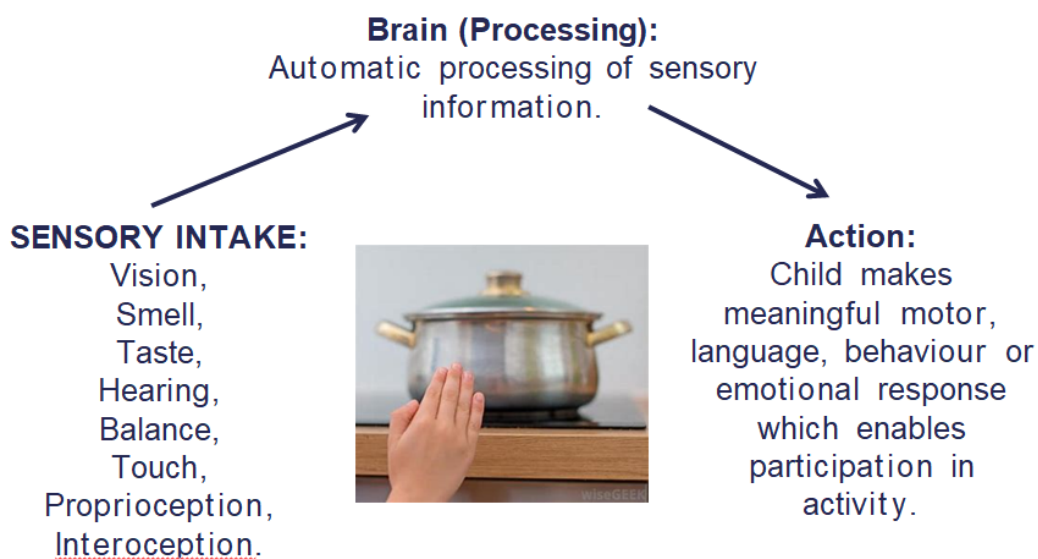
Sensory Processing is the brains ability to take in sensory information via our different sensory systems, process this information, and then respond to it appropriately. This usually happens as a smooth, automatic and unconscious process and allows us to interact with the busy world around us and manage our day to day life.

We have at least 8 sensory systems in our body that collect sensory information and relay it to the brain, these are:

- Olfactory (Smell)
- Gustatory (Taste)
- Auditory (Sound)
- Visual (Vision)
- Tactile (Touch)
- Proprioceptive (Body Position)
- Vestibular (Movement)
- Interoceptive (Internal)

When we walk into a shop we are greeted with a wide variety of sensory information picked up by our senses. The smells of the food, the noise of the trolleys, people and tills, the bright lights give off from the lights and signs not to mention the different textures around us. Taking in all this information at once would be enormously stressful and overwhelming, resulting in us being unable to cope in this environment. Our sensory processing system allows us to filter out information we don't need to respond to, and therefore allows us to focus on the sensory information that is important to us at that time. As a result, we can make appropriate an appropriate response.

## Sensory Processing in action

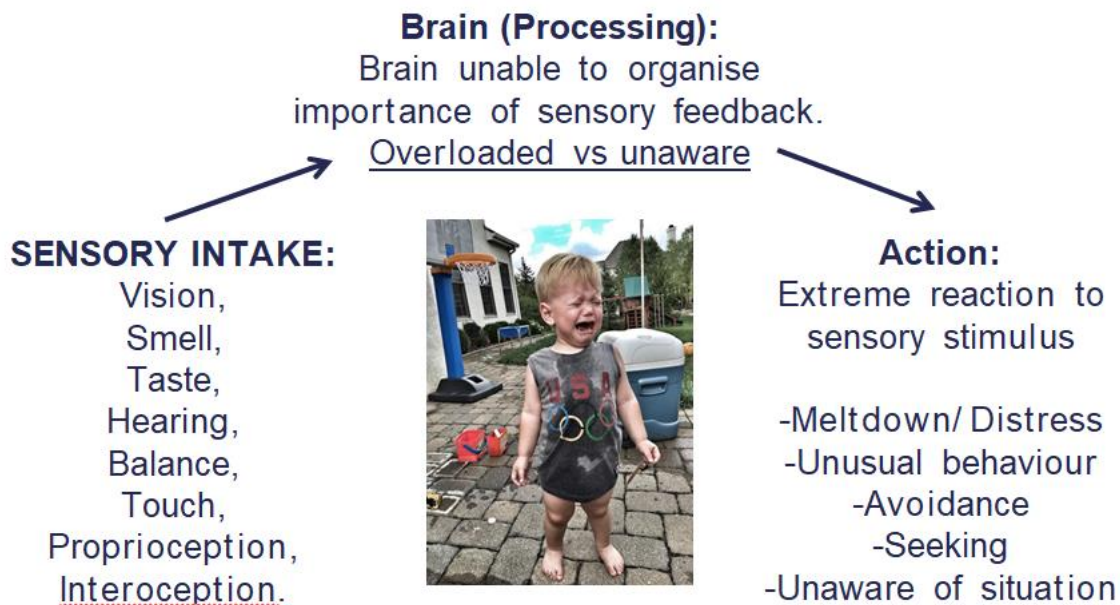


## What are Sensory processing difficulties?

Sensory processing difficulties occur when the brain cannot filter the intake of sensory information correctly, resulting in a 'Traffic Jam' in the brain. This can lead to too much or not enough sensory information being fed to us and therefore greatly impacts on how we respond to this information.

Children with sensory processing difficulties will often display what we perceive to be inappropriate or problematic behavioural, motor, or avoidant responses after sensory stimulation due to this vast intake or neglect of sensory information and therefore often leads to a child struggling to participate in certain activities or tolerate certain sensory rich environments.

## Sensory Processing Difficulties in action



## What do Sensory Processing difficulties look like?

In the United Kingdom (as of 2021), sensory processing disorder is not a diagnosable condition and therefore it can be difficult to identify a child with sensory processing difficulties. All children react differently to various sensory stimuli and some children's adverse reaction to environments or activities could be better explained or even seen alongside conditions such as ADHD, OCD, Anxiety Attachment, and Global Developmental Delay. Therefore, it's important that we understand the basis of the sensory behaviours and that a child is not simply labelled as just having sensory processing difficulties from an early stage.

The symptoms of sensory processing difficulties vary greatly depending on what senses are affected and to what extent, however we can in most cases look at children as being in 1 of 3 categories:

- Over-Responders
- Under-Responders
- Sensory Cravers

### Over-Responders

Over-responsiveness is an exaggerated response of the nervous system to sensory input. Even small activities like bathing or cutting hair may result in a child becoming overly aroused and therefore become distressed or avoid the activity or environment all together. Examples of behaviours commonly seen in over-responders could be:

- Picky eating habits and poor tolerance to different textured food
- Avoids messy play and dirty hands
- Clothing issues: doesn't like tags, seams, certain fabrics
- Self-care issues: dislikes hair care, nail-trimming, face washing, bathing
- Frequent melt downs that are out of proportion to the situation
- Easily overwhelmed in noisy, busy environments like nursery or school, supermarkets or restaurants
- Bothered by lighting or reacts to certain bright or loud TV shows
- Finds it difficult to sleep/rest/settle

Over-responders need calming forms of sensory input to help lower their arousal levels and increase their tolerance of sensory demanding tasks. Slow, rhythmic movements (vestibular), deep pressure to the muscles and joints, heavy-work activities (proprioception), peaceful music, dim or natural lighting, and quiet activities are all helpful and supportive to children in this area.

### Under-Responders

Under-responsiveness is a lack of or insufficient response to the sensory environment. Sometimes these children appear to be daydreaming or unfocused on the world around them and may not notice when they hurt themselves or appear messy/dirty. Examples of behaviours commonly seen in under-responders could be:

- May not notice messy face, hands, twisted clothing
- Be unaware or take little notice of the environment around them
- May often appear to be daydreaming or unfocused on what is going on
- May have a high pain tolerance or may not seem to notice cuts and bruises
- May have low muscle tone, may slump, slouch, and lean in chair or desk
- May appear clumsy and have poor spatial awareness

Passive under-responders need alerting forms of sensory input. Some examples include jumping, bouncing, racing the clock, fast or multidirectional movements, spinning and dancing (vestibular), blow toys, cold items, light tickling and touch.

### Sensory Cravers

Sensory craving occurs when a child cannot get enough of certain sensations, either because they feel good, because the brain is not registering the sensation and needs more input, or because this sensation is more powerful than the others. Examples of behaviours commonly seen in sensory cravers could be:

- Children who are constantly spinning, swinging, or in movement.
- Children crave spinning objects, flashing lights.
- Constantly seeks control over every situation.
- Intense, demanding and hard to calm/settle.

Passive under-responders need alerting forms of sensory input. Some examples include jumping, bouncing, racing the clock, fast or multidirectional movements, spinning and dancing (vestibular), blow toys, cold items, light tickling and touch.

## **How can I support a child with possible sensory processing difficulties?**

**Proprioception activities** are heavy work activities/tasks that require effort from our muscles and usually involve pushing, pulling or lifting. These movement activities create resistance input to the muscles and this feedback to the brain can have an 'organising' effect on the nervous system. This means that proprioceptive input can help a child to reach a "optimum" state of sensory arousal and therefore help regulate the sensory system more effectively. Proprioceptive activities are widely regarded as the most effective sensory regulating activities for parents and carers to engage their children in.

**Vestibular activities** are movement based activities that encourage spinning, rocking and swinging. Similar to proprioceptive activities, these provide feedback to the sensory system however unlike proprioceptive activity, Vestibular activities can have an alerting or calming impact on the nervous system depending on the child and how they are used. Slow methodical movements often support calming behaviours, whilst fast movements often increase alertness and arousal. It is advised you use vestibular activities carefully to ensure they are not alerting an already very alert and sensory stimulate child.

Whilst all children are different and tolerate different levels of activity, evidence indicates that 20+ minutes of proprioceptive and vestibular activity 3 to 4 times a day or before engaging your child in an activity they find demanding (from a sensory perspective) can make a positive difference. Therefore we recommend incorporating these activities into your child's day to feed and help regulate their sensory system. This is sometimes referred to as a sensory diet.

## **Where do I start?**

We are not able to prescribe which activities will work for your child or for how long and often you need to undertake these as each child is very different and their sensory processing needs will vary. Therefore, we **suggest starting with 20-30 minutes of activity 3-4 times a day at first** and keeping a diary to monitor and analyse your child's behaviour both during and following these sessions.

There may be specific times or events that are more difficult for your child to cope with such as bath times, brushing or cutting hair, going to the supermarket or changes in routines. At these times, proprioceptive activities can be used to specifically help the child calm before the event. Completing 20-30 minutes of these exercises before the event will allow you to tell if the child's main issue with the event is sensory based or not, based on their behaviour both during and after this.

As stated, these activity ideas are not prescriptive and therefore you will need to explore and trial what may work for your child and what will not.

### **Most importantly you should cease an activity if:**

- If your child becomes distressed/upset during an activity
- If your child's behaviour appears hyperactive after an activity
- If you feel the child is unsafe or at risk during an activity (All activities should be undertaken with an adult to ensure the child's safety).

### **Proprioceptive activities for children**

Proprioception activities can be used to calm the nervous system and improve focus and attention in your child, but must be controlled to ensure your child gets the most from them and also to keep them safe. Sometimes jumping on the bed can get really silly and out of control. This will do anything but calm them and therefore a young child will need an adult to structure the activities. Try these two strategies if you notice that any of the proprioceptive activities are winding up instead of winding down:

1. Sing a rhythmic song like, “The Ants Go Marching One by One...” or some other song with a steady beat while your child jumps or stomps. Jumping in particular can really stimulate some children.
2. Give the activity purpose. Instead of saying, “Go run around the house”, say, “Can you run to the swing set and back?”

### **Proprioception activity ideas**

- Jumping (This can be done on the trampoline, bed, couch or floor).
- Running
- Climbing frames or jungle gyms
- Carrying heavy items up and down stairs (with very close supervision to keep child safe)
- Tree climbing
- Rock wall climbing
- Climbing backwards up a slide
- Hanging on monkey bars, trees, pull-up bars, rope swings or from the side of a bed.
- Bouncing on top of a large ball (Yoga balls work great)
- Wheelbarrow walking
- Crab walking
- Using a pogo stick (This one is perfect because it’s safe for toddlers and children)
- Pushing or pulling self along on a scooter board or skateboard (especially with hands while riding on belly)
- Kicking balls at walls
- Tug of war using rope or rolled up towels.
- Crawling through a tunnel or homemade obstacle course
- Chewing tough resistant foods, crunchy foods (raw veggies, pretzels, etc.), chewy foods (dried fruits, gummy candy, etc.) or specially designed necklaces, bracelets and toys (Chewlery).
- Squeezing stress balls, play dough, heavy sand or putty
- Stretching and pulling on stretchy band (like a yoga or Pilate’s strap)
- Chair push ups
- Jumping jacks
- Push ups from the floor or bed
- Rolling on belly over a large yoga ball and using arms to hold up and complete press-ups.
- Playing in a body sock
- Using a Trampoline or going to trampoline club/park
- Push/pull heavy objects such as:  
Laundry basket  
Wheelbarrow  
Shopping trolley (could be a play version for young children)  
Furniture



- Carry heavy objects such as:  
Bags or items from grocery store to kitchen  
Book bag  
Loaded boxes  
Garbage bins or bags from the bin to the wheelie-bin

### **Deep pressure activities for children**

Deep pressure activities are often passive and provide lots of calming sensations by giving proprioceptive feedback. They are often used when a child has difficulty sitting still or transitioning to different activities. But, these types of activities aren't always received well. Deep pressure provides a lot of tactile input and can be very overwhelming for our tactile defensive children. Monitor your child's behaviour during these activities and cease them if causing distress.

If you aren't sure that your child will like these activities, you can experiment by just putting a lot of blankets on them or try placing a heavy object on their lap. If they seem to like it, you may want to invest in (or make) some of the weighted item below. There are lots of great ideas on the internet if you do a simple google search.

### **Deep pressure activity ideas**

- Getting or giving hugs
- Rolling up tightly in blanket like a burrito
- Sitting with a weighted lap pad or toy (Learn how and when to use a weighted lap pad with your child).
- Wearing a weighted or pressure vest (You'll want to make sure you get the right size and if using weighted, the correct amount of weight but this can be found on the internet or under the description of the product online.
- Squeezing into tight spots
- Lying under heavy objects or couch cushions
- weighted blanket (these are an investment, but for children that respond well to them they can be worth it). Try using heavy knitted blankets first before purchasing these to see if they are effective.
- Give them a back massage over their clothing using deep pressure
- Use a large ball to "steam roll" over a child's body (press firmly, be careful with head)
- Consider trialling a stretched cosy sheet like a fidget-bum sheet
- Playing in a body sock



### **Vestibular activity ideas for children**

Our vestibular system is located in our inner ears and is responsible for spatial awareness and balance. It allows children to coordinate balance with movement and, when performing correctly, it works in conjunction with the other senses to ensure we feel secure. Vestibular activities involve rhythmic movements from side to side, up and down or back to front and can be used to both calm and alert a child. Generally slow rhythmic controlled movements can calm the nervous system whilst fast rhythmic rocking movements alert it. Therefore ensure that you are in control of the activity when encouraging vestibular movement in order to target the desired outcome.

#### **Important thing to note when undertaking vestibular activities:**

- 1) Always keep speed gradual and slow (especially to start with)
- 2) Always be by the child's side, so that they feel secure
- 3) Respect when the child says "NO" or tries to avoid or stop the activity
- 4) If the child experiences dizziness, stop the activity immediately.

#### **Vestibular activity ideas**

- Gentle rolling or rocking over a peanut ball or gym ball
- Using a swing set to undertake slow, calming rocking movements
- Using a Trampoline or going to trampoline club/park (this can be alerting for some children)
- Slow rocking movements on a balance or wobble board
- Scooter Board Activities
- Visit your local soft play or playground to seek out vestibular movement activity
- Rocking in a rocking chair or horse
- Gentle rocking with rhymes or songs (gym ball or swing set)
- Slow bouncing on the therapy ball or peanut ball
- Transferring objects from one end to the other end by sitting on the peanut ball
- Going to park for swinging, sliding and spinning activities

**Sensory activity/diet example**

Day/Date: Friday 22/04/2021	List of activities completed and time taken	How did the child appear during and after the activities? Did they help?
08:30 (for 22-25 minutes)	<ul style="list-style-type: none"> <li>-Out into the garden first thing to do some walking up a slide to collect beanbags (proprioception) for 5/6 minutes. Mike was very active this morning.</li> <li>-Some time on his trampoline 5/6 minutes</li> <li>-Gym ball massage for 8 minutes to give him more proprioception and deep pressure before we went out.</li> <li>-Completed 4/5 minutes of straw sucking at breakfast for oral motor proprioception</li> </ul>	<ul style="list-style-type: none"> <li>-Very active at first but following the final deep pressure gym ball massage appeared in a slightly calmer state.</li> <li>-Went to the shops (normally very difficult for him to tolerate) but Mike was less anxious and we had not apparent meltdown behaviours.</li> </ul>
12:00 (for 26 minutes)	<ul style="list-style-type: none"> <li>-Lots of proprioception before going to nursery this PM.</li> <li>-Small period of time on his trampoline (5/6 minutes)</li> <li>-Short obstacles course in the garden with a weighted backpack (8-10 minutes) including climbing over obstacles and up his slide.</li> <li>-Slow rocking over a peanut ball whilst doing his wooden puzzle board (10 minutes)</li> </ul>	<ul style="list-style-type: none"> <li>-Really enjoyed the obstacle course. Initially very excited by visibly slowing down towards the end of this.</li> <li>-Short period on trampoline is Mike' favourite but feel this may have excited and made him more alert. May use this as a morning activity only.</li> <li>-Slow rocking over peanut ball really helped calm him down after the trampoline. Needs a lot of help to keep the movement slow and calm.</li> </ul>
18:00 (for 25 minutes)	<ul style="list-style-type: none"> <li>-Started with 5/6 minutes of bubble blowing and popping these to increase oral muscle work</li> <li>-Completed some rowing with a stretchy gym band to with Mike to give resistance for 5/6 minutes.</li> <li>-Gym ball press-ups on his tummy whilst reaching for and collecting toys to put in a box (8 minutes)</li> <li>-Also completed gym ball massage after bath and before bed for 5/6 minutes. Used Fidget bum sheet in bed to give tight hug and help settle.</li> </ul>	<ul style="list-style-type: none"> <li>Feedback from nursery was he appeared calmer and more interactive with his peers for the first hour or so (normally ignores peers).</li> <li>-Completed before bath in order to support hair washing. Tolerated hair washing very well today, a little tearful towards the end of this task.</li> <li>-Slight agitated after hair washing so completed massage before bed to help settle</li> <li>-Much calmer and more settled state for bed. Settled without much fuss.</li> </ul>