

the **early years** toolkit

hope making a difference choice understanding friendly
together quality understanding dedication hope enthusiastic specialist compassion
personal community people together help care understanding specialist dedication safe local support trust dependability
equality care choice independence respect community trust together quality care

Sensory processing

Every minute of every day we receive sensory information from the environment and within our own bodies. How effectively we process this information affects how we concentrate, behave and respond. Good sensory processing forms the basis of all learning experiences. It enables us to develop skills and behave appropriately in any given situation.

Senses

There are seven senses. The first five are commonly known:

- Auditory (hearing)
- Visual (sight)
- Olfactory (smell)
- Gustatory (taste)
- Tactile (touch)

But there are two more senses that are really important:

- The Vestibular Sense (movement and balance)
- The Proprioceptive Sense (body awareness).

All our senses are important in learning but the following three senses are crucial for the development of concentration and coordination.

- This time, when it's your turn try a different sound and see if they copy the new one or stay with their own sound
- Use a phone to hold and see if your baby will 'babble' as though talking. Try making sounds in a tube (kitchen roll tube) or in an echoey room (bathroom) and see if your baby joins in.

Remember:

Sounds are learnt and used through copying and repetition. You might find that your baby needs to hear the sounds and ideas many times over before they start to join in. It is difficult to know which sounds they might respond to first, so try a few ideas from those suggested to see which appeal to them.

Sense of Touch (The Tactile system)

Our sense of touch (tactile sense) comes from receptors in our skin all over our bodies.

Information is sent to the brain about the type of touch eg deep pressure, light touch, pain, temperature and vibration in order to make an appropriate response. If the brain does not process the touch sensation accurately then we may be described as over responsive or under-responsive to touch sensation and this will affect our behaviour.

Over-responsive tactile system

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Avoidance of touch. • Dislike of hugs. • Child becomes very disorganised, over emotional and/or out of control if they experience games that involve a lot of touch e.g. rough and tumble. • Child avoids messy play. • Child prefers to wear long sleeves even though it is a very hot day. • Child dislikes the textures of certain clothes or material on the skin e.g. labels, seams. • Child dislikes walking barefoot on certain surfaces (grass, sand). 	<ul style="list-style-type: none"> • Provide different tactile experiences and activities but be aware that the child might not want to take part. Do not force the child to join in. Offer any new tactile experiences in small amounts at first e.g. place their hand over yours rather than putting their hand in yours until they gain confidence, move towards holding their index finger and wiping afterwards. • Avoid 'light touch' activities e.g. patting on the head or tickling particularly unexpectedly. • Avoid touch from behind. • Use firm rather than light touch, deep pressure - massage rather than tickling. • Combine tactile activities with opportunities to experience proprioception – See advice sheet below • Allow space around the child in class. • Position the child at the end of a line of children. • Identify and encourage the use of fidget toys. These are toys or objects easily played with in the hand. They are quite often squeezey objects. They are often particularly effective in circle time, carpet time and getting to sleep at night. Try attaching or tying a small object to a child's mat on circle time to be kept in a pocket. • Deep pressure squeezing along their hands and arms. • Avoid crowded places. • Avoid dressing the child in certain textures of clothing that cause irritation. • Whilst trying these activities always use a calm quiet and encouraging monotone voice. • Empathise – what is tolerable for one person is unpleasant for another.

Under-responsive tactile system

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Appears to have a dulled sense of touch. • Doesn't register pain or react to cuts or bruises. • Poor fine motor skills. • Weak grip. • Likes messy play more than most children. • Likes rough n tumble activities more than most children. • Seeks touching all objects. • Poor body awareness. • Child likes a lot of hugs. 	<ul style="list-style-type: none"> • Give more opportunities to experience activities that involve increased feeling through the skin. e.g. a Duplo activity where the child is finding pieces in a box of other Duplo is better than playing on a 'games' console or similar device. • Play 'What's in the Box/bag'. Introduce a number of objects previously seen by the child into a box or bag where they cannot see. They have to find the object you ask for. • Sand play and messy play is useful. Find hidden objects without vision. • Creative activities using glue, clay, different textures are also useful. • Identify and encourage the use of fidget toys. These are toys or objects easily played with in the hand. They are quite often squeeze objects. They are often particularly effective in circle time, carpet time, assembly and getting to sleep at night. Try attaching or tying a small object to a child's mat on circle time, or kept in a pocket.

Sense of Movement (The Vestibular system)

The vestibular sense provides us with a good posture, balance and movement

sensation. Our movement receptors are located in our inner ear and send information about our position and how we are moving to the brain. If the brain does not process the movement sensation accurately then we may be described as over responsive or under-responsive to movement sensation and this will affect our behaviour. If the brain is over responsive, it can become easily overwhelmed by a movement experience causing fear, anxiety and avoidance or if under-responsive it may seek out more movement experiences to satisfy the need.

It is important to consider where the child is in their development, particularly their movement skills. If they cannot sit up on their own, they will need a lot of support around their body or trunk. If they are not holding their head up at nine months or are intolerant of being picked up or handled, they should be referred directly to CYPIT for advice.

Over-responsive movement system

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Child is fearful of movement. • Child dislikes escalators or lifts. • Child does not like playing on playground equipment. • Child may be travel sick. • Dislike head tilted back e.g. hair washing, rough and tumble. 	<ul style="list-style-type: none"> • When travelling encourage the child to look out of the window and hold a toy/object that is easy to fidget with without looking e.g. a squeeze toy. • Give the child options i.e. to use the stairs rather than a lift or escalator. • Encourage participation in the type of movement the child does enjoy and tolerates. • Never force a child to participate in an activity. • If they are not keen to jump they may jump holding your hand. • Combine movement activities with opportunities to experience proprioception – see advice sheet below.

Under-responsive system or problems processing movement information

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Child is always 'on the go' more than their peers. • Child appears to take excessive risks e.g. shows no fear when jumping from a big height. 	<ul style="list-style-type: none"> • Provide the child with ample opportunities to experience movement e.g. going to the park regularly, swimming, trampolining, soft play etc. • Create a safe environment in which the child can experience movement. If purchasing a garden trampoline ensure it has a safety net. • Provide more practise with certain movement related skills such as jumping, swinging, animal walks. • Split the child's day into small sections allowing for frequent movement breaks. • 'Row your Boat' singing and rocking while sitting on the floor, Hokey Cokey and other nursery movement actions/songs.

Sense of Body Position (Proprioception)

Closely related to the vestibular sense is the sense of proprioception which gives us an awareness of body position. It lets us know where our body is in relation to the immediate space around us. It also lets us know how to move our body and how much force we need to use to carry out a task.

When proprioception is processed well, an individual's body position is automatically adjusted and this helps with every aspect of our day e.g. negotiating our way around objects in a room or preventing us from falling out of a chair. Proprioception also allows objects such as pencils, buttons, spoons and combs to be skilfully manipulated by the hand; to pick up a drink of water without spilling it.

The proprioceptive system also has another role – it helps us to modulate and calm our arousal level so that we can attend and focus.

Our proprioceptive system has receptors located within our muscles and joints. These receptors or sensors are triggered when they are squashed or pulled apart during movement. Many of the activities suggested stimulate this sensation as it is so useful to the body and brain.

Problems related to the proprioceptive system

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Appears over forceful perhaps damaging toys unintentionally. • Walking into others whilst looking ahead. • Tripping over. • Falling from chairs. • Poor fine motor skills compared to peers – difficulties with precision movements. • Poor body awareness. 	<ul style="list-style-type: none"> • Think of lots of activities that involve effort, pushing and pulling. • If we are moving and using effort, we are compressing or triggering these receptors. Examples of activities include: helping with jobs around the house, carrying objects, pushing heavy doors or pre-school, gardening, pushing wheelie toys swimming, trampolining, playground equipment, running, cycling on a trike or bike, kneading dough or modelling with clay and tug of war. • Make sure there are rewards for help given. Remember the jobs mentioned above can be very tiring so the secret is make it motivating for the child to participate little and often. • Create a 'fidget-box'. This is a box of objects such as squeeze toys, and allow the child to choose an object when they are finding it hard to concentrate or calm down. Make sure the child is able to use the object safely and appropriately. • Cardboard boxes – hiding, squeezing into, ripping apart, jumping on, pushing with toys in

Auditory Processing

If the brain does not process noise sensation accurately then we may be described as over responsive or under-responsive to noise sensation and this will affect our behaviour.

We may need more or less noise in our environment in order to help us focus on a task.

Over-responsive auditory system

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Child over-reacts to loud noise, thunder, vacuum cleaner, hairdryer, fire drills or sudden noises. • Child often places their hands over their ears. • Child appears less able to concentrate or focus in a noisy environment. • Child makes own noises more persistently than peer group. • Show frequent startle reactions to noise. • Notice even small sounds. 	<ul style="list-style-type: none"> • Encourage the use of proprioceptive activities above. • Soft, calm music played into ear phones may aid concentration and calm a child. Try using classical music. Make sure the music is not played too loudly through the earphones. • Allow the child to carry out activities in a quiet environment at intervals throughout the day. • Allow the child something to fidget with something, and use the proprioceptive ideas above. • White noise can be downloaded from the internet and this can also be useful when played quietly through ear phones. • Earphones (without additional noise) or a tighter fitting hat can provide relief from noise.

Under-responsive system or problems registering auditory information

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Child doesn't seem to notice when their name is called. • Child enjoys and seeks out loud or unusual noises more than peers. • Has a disregard of sudden or loud noises. • Does pay attention in a noisy environment/or to people. • Show, delayed responses to noise. • Makes noise by tapping, humming, whistling etc. • Need noise to increase their levels of alertness. 	<ul style="list-style-type: none"> • Try to make sure that you gain eye contact with the child when you need their attention. • Understand that a child's lack of response may not necessarily be under their control. • Allow the child the opportunity to be noisy in a controlled environment.

Visual Processing

If the brain does not process visual sensation accurately then we may be described as over-responsive or under-responsive to visual stimuli and this will affect our behaviour. We may need more or less visuals in our environment in order to help us focus on a task.

Over-responsive visual system

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Behaviour of child becomes more erratic in a more visually stimulating environment. • Is visually distracted by others. • Notices everything that's happening in the room. • Child keeps head and eyes facing downwards most of the time. • Startle at visual input. • Show a sensitivity to light. • Be irritated by bright lights. • Prefer sunglasses/peak cap. 	<ul style="list-style-type: none"> • Allow the child to carry out activities in a less visually stimulating environment at intervals throughout the day. This may mean creating a suitable environment in the Pre-school classroom such as a blank corner separated by dividers or a table covered in a sheet that the child can crawl under. • Child may like to wear sunglasses. • Make sure the child's eyes are tested regularly at an Opticians. • Be aware of this sensitivity in brightly lit areas e.g. supermarkets

Under-responsive visual system

What you may see	Possible solutions to try
<ul style="list-style-type: none"> • Child may not notice details in pictures. • Child may have difficulty distinguishing the foreground from the background e.g. find an object when it is hidden amongst others in a drawer. • Shows a lack of attention to environment/people • Often misses visual cues 	<ul style="list-style-type: none"> • Practice games such as; I spy. Books like the 'Where's Wally' series and similar themed books for younger children, Kim's game, finding/sorting colours/shapes, puzzle books. • Practise ball skills using large balls, beanbags or balloons to start with. Practise rolling the ball before throwing. • Have your child's eyes tested at an optician's

References and reading list:

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The Out of Sync child: Coping with Sensory Integration Problems

Carol Stock Kranowitz (1998).

Take 5, Staying Alert at Home and School

Williams & Shellenberger (2001), Therapy Works, Albuquerque.

Building Bridges through Sensory Integration

Yack, Aquilla & Sutton (2002), Future Horizons.

Sensational Kids: Hope and Help for Children with Sensory Processing Disorder

Lucy Jane Miller (2006), Penguin Group USA .

Tools for Tots: Sensory Strategies for Toddlers and Preschoolers

Henry, Kane-Wineland & Swindeman (2007) Henry OT services inc.

Guide to Dyspraxia and Developmental Co-ordination Disorders

Andrew Kirby, Sharon Drew(2003) David Fulton Publishers LTD

The Inclusive Early Childhood Classroom -

Easy Ways to adapt Learning Centers for all Children

Patti Gould and Joyce Sullivan