

Sensory Integration

**“ My little boy puts his hands over his ears and hums.
He won’t eat certain foods together, almost like he doesn’t like
different textures at the same time.”**



Sensory Issues and Autism Spectrum Disorder

Approximately 95% of children with an autism spectrum disorder have sensory integration difficulties or differences.

Sensory Integration is a neurological process which happens in the brain, e.g. snatching your hand away from a hot surface is sensory processing. It is concerned with processing and interpreting the various sensory stimuli received from the environment.

Children with ASD are often mono-sensory i.e. can only deal with 1 bit of sensory information at a time. This difficulty with filtering information causes sensory overload. To avoid this, sensory stimulation should be kept to a minimum.

The Senses

The senses are organised into higher and unconscious senses.

The Unconscious Senses	The Higher Senses [some conscious control]
Proprioception: <ul style="list-style-type: none"> ○ The sense of body position [ability to drive a car without looking at pedals, control body by ‘guessing’] ○ Gauges the force needed to do activities [writing, cutting food with knife] ○ Often presents as a deep pressure activity [head banging, biting, hugging tightly] 	Visual: <ul style="list-style-type: none"> ○ What we see ○ How we see it
Tactile: <ul style="list-style-type: none"> ○ What we can feel ○ Sensory input through the surface skin receptors ○ Protective ○ Discriminative [sharp, hard, soft] 	Auditory: <ul style="list-style-type: none"> ○ What we hear
Vestibular: <ul style="list-style-type: none"> ○ Helps to know where your head is in space. Middle ear cavity, liquid, hairs are sensory receptors into brain. Head movement knocks on all receptors. Forwards, backwards, linear movements are calming e.g. rocking, swinging. Difficulty coping with spinning. 	Gustatory: <ul style="list-style-type: none"> ○ What we taste

○ Helps you to judge speed, know the direction you are moving, understand gravity	
	Olfactory: ○ What we smell

Sensory Processing Dysfunction

This occurs when the sensory input is not integrated or organised appropriately in the brain and may produce varying degrees of problems in development, information processing and behaviour. Difficulties may include: balancing arousal levels [low arousal= sleep, high arousal= escape] and over or under reactions to sensory inputs.

Indicators

- Attention problems
- Difficulty maintaining an alert but relaxed state: hyper [over] or hypo [under] activity
- Avoidance of touch or movement
- Self-stimulation~ persistent or interfering in tasks
- Self injury
- Stereotypic behaviours
- Self injury
- Rigidity, inflexibility, difficulty tolerating or adjusting
- Unpredictable explosions of emotion

Note: Self-injury may have started as a sensory issue and become a behavioural issue due to the reactions of others.

Implications

- **Tactile~ touch defensive [hypersensitive]**

Indicators	Strategies
Avoid/ withdraw from touch. Cannot tolerate being touched by others [but may seek 'touch' on own terms]	Reduce environmental triggers e.g. sitting on the periphery of the group, lining up at front or back of line. Use circles of elastic to 'make a circle' or link arms rather than holding hands. Desensitisation programmes e.g. brushing.
May strip clothing	Clothes give light touch stimulation to all receptors resulting in high state of arousal [cannot cope with feel of clothes]. Senses need remodulating before putting clothes back on.
Sensitive to extreme temperatures	
Appear inflexible: everything on their own terms	

Note: use 'deep pressure' to override tactile defensiveness i.e. firm rather than light touch, rubbing movements [feet, hands], squeezing [stress ball].

- **Tactile~ touch seeking [hyposensitive]**

Indicators	Strategies
May not register or orient to touch unless intense	Light touch followed by firm pressure
Poor tactile discrimination	Access to different textures
Delayed reaction	
Crave excessive amounts	
Often mouths objects [seeking stimulation of receptors in mouth]	Appropriate objects

- **Proprioception~ dysfunction**

Indicators	Strategies
Insufficient information from muscles, then not enough feedback about movement and position	Heavy work with movement Pushing, pulling, carrying, jumping [jumping jacks] Movements bearing weight through arms e.g. over physio ball Joint compression~ mouthing, sucking, biting, blowing, chewing e.g. biting on rubber tubing Sitting: chair may need padding, consider sitting on a physio ball
Motor planning difficult/ clumsy	
Fatigues easily	
Inattentive as concentrating on body position	
Self-harm: biting/ banging [calming other senses or raising level of alertness]	Regular bursts of 'proprioception' movements~ small amounts to keep regulated
Making loud noises	Access to music e.g. through personal stereo

- **Vestibular~ seeking**

Indicators	Strategies
Craves movement, always on the go	Short bursts/ high frequency of fast movements e.g. spinning, jumping within activities: dancing, trampolining, climbing. Calm down with linear movements.
Climbing, bumping, jumping, falling	
May not register, or may require excessive amounts to stay alert/	

organised	
Prefers to move rather than sit and learn	
Needs close supervision, takes risks, little awareness of danger	

- **Vestibular ~ avoiders**

Indicators	Strategies
Fearful of changes in gravity/ position	Gradual linear movements [least effect on ear liquid] which are slow and small Gentle rocking Link with proprioceptive input Self control within activities e.g. rocking chair, slow swinging, horse riding
Dislike of heights	
Cannot tolerate changes in head position	
Becomes dizzy and sick	
Shows anxiety/ controlling behaviour to prevent sudden movement	

- **Visual, Auditory, Olfactory, Gustatory Sensitivities**

Indicators	Strategies
<p>Visual:</p> <ul style="list-style-type: none"> ○ Be careful of visual overload caused by what we wear, presentation of materials, environment ○ Light sensitivity 	<p>Environmental adaptations e.g. curtains on bookshelves, eliminate clutter, secure items on notice boards so they don't flutter.</p> <p>Bar lighting actually flickers very fast, reduce by covering with tissue paper. Use spotlights with main light off. Adjust blinds so sun doesn't flicker through.</p> <p>Pupil position is important e.g. distracted by movement of other pupils</p> <p>Worksheets: instructions to a minimum. White space around each problem to enable focus [cardboard template can help]</p>
<p>Auditory:</p> <ul style="list-style-type: none"> ○ Auditory information can be distracting, care needed when using it as background as it may be foreground ○ Some sounds can be uncomfortable or painful 	<p>Calming/ classical music can help to soften the auditory environment and override distracting noises.</p> <p>Cover hard surfaces with carpet, cloth, corkboard.</p> <p>Pupil position is important e.g. distracted if sat by a window, ensure not seated near anything producing 'white noise.'</p>
<p>Olfactory:</p> <ul style="list-style-type: none"> ○ Impact of smells e.g. perfume, cleaning fluids 	

Gustatory:

- Picky eating may be due to this sense or another
- Preference for sour or spicy foods

Take all senses into account when serving food

