**PATTERN OF SENSORY PROCESSING:**

**Use this as a basis for developing something like the PRPP observations. Use these websites to assist in developing descriptors for each box:**

[**https://www.spdstar.org/basic/subtypes-of-spd**](https://www.spdstar.org/basic/subtypes-of-spd)

**(a) Auditory:**

|  |  |  |
| --- | --- | --- |
| **OVER SENSITIVE** | ***Sensitive****: amount CLIENT over-responds (fails to habituate, notices more than others) sound/noise stimuli* | * Very sensitive to auditory stimuli – detects noises earlier than others/ can detect quiet conversations at a distance/ hears far-off sirens.
* Startle response to certain noises such as babies crying. He used to react to other non-noxious noises (such as the vacuum cleaner), but a lot of work has been done by his guardians to desensitise this.
* Important to note here, that there is a paradoxical effect, observed constantly, where CLIENT doesn’t register auditory information (such as his name being called, information being told to him). On the surface, this seems to contradict, and therefore eliminate, any assessment of auditory sensitivity until one understands that CLIENT is even more sensitive to visual stimuli than auditory, and its visual stimuli that has primacy for him. Because CLIENT is only able to process one sense at a time, and his processing capacity is constantly taken up by the demands of processing the excessive amount of visual stimuli he notices, CLIENT is completely unable to process auditory information even though he’s sensitive to it.

*\*there may be other behaviours of CLIENT’s that fit here. Needs to be explored in more detail.* |
| ***Avoids****: amount CLIENT retreats from sound/noise stimuli because it is experienced as painful/noxious.* | * Uses ‘drown-out’ strategies which mitigate the distant unpleasant noises by creating loud adjacent ones – such as yelling and making loud noises.
* Avoids noisy environments, or specific noises.
 |
| **UNDER SENSITIVE** | ***Registering****: amount CLIENT fails to notice or misses sound/noise stimuli/cues* |  |
| ***Seeking****: amount CLIENT adds sound/noise intensity into their life.* |  |

**(b) Visual:**

|  |  |  |
| --- | --- | --- |
| **OVER SENSITIVE** | ***Sensitive****: amount CLIENT over-responds (fails to habituate, notices more than others) visual stimuli* | * Has a longer habituation time to new visual stimuli, but eventually adjusts. For example, when going from the house out into the sun, CLIENT hides his eyes and can’t look. He keeps his head down for an extended period while travelling in the car but eventually can handle the brightness and look around.
* Extremely sensitive to visual stimuli in the environment. Distracted from tasks by other visual stimuli in the room – movement, decorations, people.
* Completely visual stimulus dependent. He sees something, his focus goes to it and the task becomes whatever is relevant to that item.
* The only activities that give the impression of focus are those activities with fast-changing visual stimuli (like TV). CLIENT is not actually maintaining attention because the stimulus itself doesn’t require more than transient attention before it moves onto the next stimulus.
 |
| ***Avoids****: amount CLIENT retreats from visual stimuli because it is experienced as painful/noxious.* | N/A |
| **UNDER SENSITIVE** | ***Registering****: amount CLIENT fails to notice or misses visual stimuli/cues* | N/A |
| ***Seeking****: amount CLIENT adds visual intensity into their life.* | N/A |

**(c) Touch:**

|  |  |  |
| --- | --- | --- |
| **OVER SENSITIVE** | ***Sensitive****: amount CLIENT over-responds (fails to habituate, notices more than others) tactile stimuli* | * Very fussy about meals in, what seemed, and inconsistent pattern with refusal at sometimes and eating the same thing happily at others. Analysis seems to identifies that the problem is not individual foods, but when there are mixed textures (sloppy/runny/smooth in the same dish as solid items). He refuses casseroles, yoghurts with fruit pieces etc. CLIENT refuses foods based on them ‘looking funny’. Unsure if this is because he sees the mixture of textures, or if there is some other factor also at play in his response to food.
* CLIENT experiences distress+++ during grooming activities - strongly dislikes having hair washed, combed, brushed or cut or fingernails cut
* Fussy about irritating aspects of clothing – more than his peers. This mainly seems to be relating to tags more than fabric types.
* Used to be extremely sensitive to light touch. Guardians have been activity desensitising this since CLIENT was a toddler so that he can now tolerate casual light touch without lashing out in response.

*\*there may be other behaviours of CLIENT’s that fit here. Needs to be explored in more detail.* |
| ***Avoids****: amount CLIENT retreats from tactile stimuli because it is experienced as painful/noxious.* | N/A |
| **UNDER SENSITIVE** | ***Registering****: amount CLIENT fails to notice or misses tactile stimuli/cues* | N/A |
| ***Seeking****: amount CLIENT adds tactile intensity into their life.* | N/A |

**(d) Movement and Body/Environment Interaction (Vestibular):**  receptors in inner ear when combined with supplementary information from the visual, auditory & tactile modalities to give information about whole-of-body movement, body position on vertical, horizontal and diagonal planes, rotation & maintaining a horizontal eye position - all of which are critical for balance and secure/coordinated movement through environments that can be stable or moving.

|  |  |  |
| --- | --- | --- |
| **OVER SENSITIVE** | ***Sensitive****: amount CLIENT over-responds (fails to habituate, notices more than others)* movement *stimuli* | * Extremely sensitive to movement as an ‘alerting’ sensation. He becomes hyper-aroused (“overstimulated”) and cannot settle without adult support to co-regulate – and even then, it takes a long time to properly settle.
 |
| ***Avoids****: amount CLIENT retreats from* movement *stimuli because it is experienced as painful/noxious.* | * Reports and avoids motion sickness – sometimes even without movement (eg. when eye position watching computer game or movie gives the impression of movement).
 |
| **UNDER SENSITIVE** | ***Registering****: amount CLIENT fails to notice or misses* movement *stimuli/cues* | N/A |
| ***Seeking****: amount CLIENT adds* movement *intensity into their life.* | * Used to do a lot of rocking. Guardians have worked to replace rocking behaviours with deep touch (proprioceptive) strategies so that CLIENT no longer seeks rocking.
 |

**(e) Body Part-to-Part Movement & Position (Proprioception):**  receptors in muscles, tendons, ligaments and joints that detect being pulled and pushed about with muscle contraction and joint movement providing information about strain, tension, weight, bodily position, and movement of body parts in relation to each other.

|  |  |  |
| --- | --- | --- |
| **OVER SENSITIVE** | ***Sensitive****: amount CLIENT over-responds (fails to habituate, notices more than others) joint positioning stimuli* | N/A |
| ***Avoids****: amount CLIENT retreats from joint positioning stimuli because it is experienced as painful/noxious.* | N/A |
| **UNDER SENSITIVE** | ***Registering****: amount CLIENT fails to notice or misses joint positioning stimuli/cues* | Very low registration of proprioceptive stimuli. CLIENT has trouble with motor planning – misjudging how much to flex and extend muscles during tasks/activities especially when he cannot see the body part involved. This manifests in difficulties with: * the parts of dressing where his head is covered and he’s trying to find the armholes;
* inaccurately locating his arm to wipe his bottom during toileting
* walking in creek beds where there is a rocky base and the visual information is distorted by the water. He completely avoids these situations
* cannot register the information he needs to ‘work’ a swing independently
* clumsy when no visual cues or when he is hyper-aroused (and therefore less able to take in information)
* slap/dash performance or complete refusal of fine motor tasks where he cannot see what he is doing. He avoids paper and pencil activities – picking the smallest patch of a picture to colour-in and tries to engage adults with helping for the rest
* difficulty regulating pressure with which to approach activity – often using too much force in his play with others.
 |
| ***Seeking****: amount CLIENT adds joint positioning intensity into their life.* | Seeks out:* vigorous play activities – jumping, bumping, crashing
* loves deep touch/compression activities – eg. Bear song which involves ‘playing the drums’ on CLIENT’s back. This is very effective in calming.
* Will bite others – and bite hard when extremely agitated

*\*there may be other behaviours of CLIENT’s that fit here. Needs to be explored in more detail.* |

**(f) Smell and Taste:**

|  |  |  |
| --- | --- | --- |
| **OVER SENSITIVE** | ***Sensitive****: amount CLIENT over-responds (fails to habituate, notices more than others)* smell/taste *stimuli* | * offended and avoidant of bathroom odours and personal hygiene smells (the distress of smelling his own poos in toilet might make the proprioceptive issues in wiping even more challenging as CLIENT tries to get out of the toilet quickly).
* Complains and is distressed if unable to avoid unpleasant smelly sensations.
* Tells everyone they ‘stink’.
* Detects farts well before anyone else does.

*\*possibly sensitive to taste but currently the behaviours point to more an issue with textures in the mouth (which a ‘touch’ issues not a taste issue). CLIENT is extremely selective about foods he eats, but it is not consistent.* |
| ***Avoids****: amount CLIENT retreats from* smell/taste *stimuli because it is experienced as painful/noxious.* | * Tries to avoid going into places that smell unpleasant
 |
| **UNDER SENSITIVE** | ***Registering****: amount CLIENT fails to notice or misses visual stimuli/cues* | N/A |
| ***Seeking****: amount CLIENT adds* smell/taste *intensity into their life.* | * Routinely smells people and non-food objects – especially deodorants, perfumes, aftershave, flowers.

*\*need further investigation of the type of scents CLIENT seeks out: (1) fruity or etherial odours found in apples, grapes, orange, oil, etc.; (2) flowery or fragrant odours found in pansy, carnations, etc.; (3) spicy odours, found in cloves, cinnamon etc.; (4) resinous odours, found in pitch, turpentine, etc.; (5) scorched odours found in burnt substances, tar, pyridue, etc.; (6) putrid or foul odours, found in decaying animal matter, hydrogen sulphide, etc.* |

**(g) Internal Body Cues (Interoception):**  perception of sensations from inside the body and includes the perception of physical sensations related to internal organ function such as heart beat, respiration, satiety, as well as the autonomic nervous system activity related to emotions.

|  |  |
| --- | --- |
| ***Sensitive****: amount CLIENT over-responds (fails to habituate, notices more than others) internal sensations* |  |
| ***Avoids****: amount CLIENT retreats from internal sensations stimuli because they are experienced as painful/noxious.* |  |
| ***Registering****: amount CLIENT fails to notice or misses internal sensations* |  |
| ***Seeking****: amount CLIENT intensity into her life.* |  |

**SENSORY DIET & PRINCIPLES FOR IMPLEMENTATION:**

Sensory stimulation is cumulative – both organising and disorganising stimulation. We need to promote an increase in organising stimulation and a decrease in disorganising stimulation through the development of a “Sensory Diet”.

As a complete sensory diet needs to fit within an existing schedule, and as I don’t have the school and home routines to use as a base, I’ve listed the key elements to include in the diet. There will need to be further liaison to complete the sensory diet plan for maximum benefit.

They key features of a sensory diet:

1. Prescribed and timed use of sensory activities that organise the impact sensory experience has on CLIENT’s nervous system, and therefore his reactions to that impact (which is the source of his presenting behaviours)
2. Suggestions for changes in routines, interactions, and environments:

**1. Sensory activities to promote organisation of the nervous system:**

Research has shown that certain sensory modalities are a greater positive (and long lasting) impact on calming the nervous system than others. These are the vestibular, proprioceptive, and deep pressure touch modalities:

* When used correctly, 15mins of vestibular-based calming strategies can promote organisation for 4-8hrs. (The same is true for vestibular alerting activities – they can promote disorganisation for just as long).
* 15mins of proprioceptive and deep pressure touch strategies can promote organisation for 90-120mins.
* Other modalities (based on CLIENTs’ patterns of preference) can also be calming but the effect is far more transient.

*A. Vestibular:*

Scheduling: upon waking, middle of day, end of day (every 4-5 hours)

Stimulation: SLOW rhythmic movement (imagine the speed a parent rocks while standing with a sleeping baby nuzzled into their chest). This is most powerful when a back/forth motion in prone (lying on stomach). Suggestions include:

* Using a swing (or tyre) with CLIENT on his tummy where the swing speed is tightly controlled (holding CLIENT’s legs to do this would add calming proprioceptive stimulation). Do a momentary ‘stop’ at each high point.
* Snuggling with CLIENT on adult lap on a swing. Adult’s feet don’t leave the ground. Move the swing back and forth in a slow rocking action
* Snuggling with CLIENT on adult lap and rocking in a chair or on the side of a bed
* Using an exercise ball with CLIENT flopped over the top – arm stretched out above head. Slowly moving the ball back and forth so that CLIENT alternates between touching his hands to the ground, then his feet to the ground. [On very rare occasions, this has had such a calming effect on children, that children have gone unconscious, so monitor closely and adjust the rate of rocking to produce calm not stupor.]

*NB. Fast changing movement is excitatory. CLIENT is particularly sensitive to its effects so it must be kept to a minimum.*

*NB. Don’t use rotary/spinning activities – there are serious precautions that need to be followed to use these safely*

*B. Proprioception & Deep Pressure Touch*

Scheduling: upon waking and every 90-120mins until just before bed.

Stimulation: Heavy muscle action, joint compression, deep pressure touch. Suggestions include:

* Anything that makes the muscles work against resistance – push/pull activities such as hand-to-hand pushing
* Chores where have to re-arrange, carry, shift items
* Stomping/marching/animal walk games
* Body slamming activities (socially appropriate ones). Run into a gym mat secured against a wall. Falling from standing on a bed/chair onto a mattress on the floor.
* Pillow sandwich where pillows are the bread and CLIENT is the filling (on his tummy). Adult slowly and with gentle firmness, presses down on the top pillow to give deep pressure stimulus.
* **Therabrushing and joint compression protocols** – a very specific strategy which will be taught for you to use
* Rolling large ball over CLIENT’s body lying on tummy – with pressure and slow movement
* Tight ‘bear hugs’
* Play wrestling (especially where roll-over each other), tug-a-war, swinging on monkey bar games.
* “Playing drums on back” activity that CLIENT’S MUM already uses very effectively with CLIENT
* “Cleaning the floor”: CLIENT lying on his back on floor or bed. Take his feet and pull/push enough to produce the tiniest movement of his bottom on the floor. You don’t actually ‘sweep’ with him. [Watch the demo in the video mentioned below.]
* “Giant feet”: CLIENT is lying on his tummy. From his feet march your hands (with pressure) up the back of his legs, all the way up his back, and back down again. [Also demonstrated in the video – just don’t use the ‘ski-ing back down stimulus for CLIENT also in the video].
* Sitting/Swimming at the bottom of the pool. As CLIENT isn’t yet able to swim, do it with him. Eg. Take a breath, sink to the bottom together. Stay there for a few seconds. Return to surface and breathe out. No splashing games (this is light touch and stimulatory)
* Pulling by legs or arms while floating in the pool. Use a noodle under arms if CLIENT cannot float.
* Tight swaddling in a blanket “Mummy in a sheet” or “Cocoon” games
* Weighted blankets/vests

The YouTube video titled: “Sensory Input Techniques to Calm and Focus Your Child” (<https://www.youtube.com/watch?v=4i258YX-6Do>) gives brilliant examples of some of these activities and really highlights the importance of ‘slow’ in the calming process (watch the OT vs. the parent here).

*NB. Stationary heavy lifting doesn’t work as, within the 15mins, the muscles have habituated. Must be ‘moving’ heavy work otherwise the activity will be 50% less effective.*

*NB. Be careful to minimise the negating effect of ‘light touch’ as enter and exit deep touch activities. Eg. Pillow cases need to be firm fitting for pillow sandwich, and the top pillow placed and held firmly immediately (not just resting on top where it provides light touch stimulus).*

*C. CLIENT specific Sensory Soothers*

Scheduling: as additional supports to help organise in situ

Stimulation: Pleasant smells, slow moving visual stimuli, and possibly music-related and oral motor activities, which given CLIENT’s profile, are likely to be helpful:

* Nice smelling desk-based soothers – eg. Lip glosses, a hanky with the smells CLIENT likes
* Chewy foods
* Scheduled times of yelling out loud
* Music at a tempo 30-60 beats per minute when sitting
* Blowing/sucking activities: bubble blowing, whistles without high pitch sound, drinking heavy liquids (like thick smoothie or thin custard), blowing cotton wool balls across a maze on a table, crazy straws

**2. Changes in routines interactions and environments:**

* Consistent routines for daily activities (wake-up, dressing, school time, mealtimes, bathing, bedtime) with awareness of the sensory qualities of those daily events on CLIENT – trying to minimise disorganising aspects as much as possible. Use pictures with Velcro that can help with organising the tasks for the day.
* Increasing the predictability of schedules and transitions as new activities and changes of any type are very disrupting to individuals with sensory processing issues.
* Implementing proactive sensory calming activities in advance of a disruptive event (such as a haircut) to minimise the disorganising effect of that necessary event
* Schedule breaks from sensory demanding environments into the safe sensory environment
* Modify voice quality to be quieter, lower toned and slower. Minimise use of words. Ie. for PRPP verbal prompts, aim for 4-5 words only. No polite ‘fluff’ around the edge of prompts or instructions.
* Avoid light touch. Avoid unexpected touch. Use firm touch. Give warning of touch. Do hug. Don’t tickle (the impact of this has a delayed excitatory effect 20-30mins later)
* Reduce the demand for eye contact.
* Move or pick CLIENT up slowly and smoothly.
* Be predictable in interaction – don’t touch or move unexpectedly.
* Use one type of sensory stimulation at a time: they see you. Then you talk. Then you touch.
* Provide a safe sensory controlled environment (ie. tent).
* Add in leisure activities that have the elements of deep touch, slow movement and proprioceptive input.