Engaging soothing sensory inputs for complex needs; an interactive online guide for support workers

Imagine……

Imagine……

- You love to stand outside in the rain
- Your favourite food is blueberries
- You love to listen to Country Music
- Your favourite colour is blue
- Your favourite scent is lavender

Your disability……

- You are non-speaking
- Visually impaired
- Autistic, classified as Level 3
- Moderate intellectual disability

Challenges

This is the reality of daily existence for many of our clients

Communication, intellectual and physical impairments restrict the options available for engagement in meaningful activity

Significant impact on general wellbeing, mental health and behaviour

Occupational Deprivation

- "*a state of preclusion from engagement in occupations of necessity and/or meaning due to factors that stand outside the immediate control of the individual*"
- Health and wellbeing depend upon being able to engage in occupations that are meaningful and of one's choosing

Convention on Rights of People with a Disability

Article 19 states:

" Parties to this Convention recognize the equal right of all persons with disabilities to live in the community, with choices equal to others, and shall take effective and appropriate measures to facilitate full enjoyment by persons with disabilities of this right and their full inclusion and participation in the community ."

Implications

- Meaningful activity is necessary for us all
- Clients with disabilities need creative solutions to ensure they access meaningful activities
- Identifying the right activities is challenging
- Access to occupational therapy as a resource is often limited

Papunet

Finnish website that provides information and materials for augmentative and alternative communication as well as easy to use games and activities for people with complex needs

https://papunet.net/sv/what-is-papunet/

Why SensePlanner?

- Being asked to create 'sensory diets' for complex needs clients to improve self-regulation – especially for reducing incidents of aggression, property damage and self-harm.
- Also frequently asked for advice on how to engage clients who support workers have great difficulty engaging (not interested in anything) and also for repetitive behaviours (OCD?) that limit participation...
- Success in reducing the incidence of Behaviors of Concern by educating staff in the basic principles of sensory intervention (when people are happier they are less likely to be difficult to manage - vestibular and proprioceptive input are generally soothing.)
- Timidity of support workers in approaching clients and engaging them in activity (get them out from behind the kitchen counter....) and confusion about what activities are OK (cleaning?)

Aim of Sensory Intervention

- To increase 'pleasure in existence.'
- Generally, when people are happier they are easier to be around.
- As OTs we do this in two ways - we try to identify what every day sensory experiences cause distress AND we try to identify what sensory inputs 'pushes the person's buttons;' what sensory experiences they most enjoy.
- Then we find ways to protect the person from the distressing elements of their sensory experience AND we also work to give the person more access to the sensory inputs they most enjoy.
- Identifying specific sensory activities the person enjoys, shaping these to be even more enjoyable overtime, while giving more frequent (throughout the day) access to these activities, is what SensePlanner wants to assist.

The Eight Sensory Systems

- Visual
- Olfactory
- Taste
- Proprioception
- Auditory
- Tactile
- Vestibular
- Interoception

General Principles of Sensory Intervention

- **CAPACITY**
  If there is any doubt about the individual's capacity to cope with a recommended sensory-motor strategy, clearance should be sought from their treating medical professional(s), especially if the individual has a history of epilepsy.
- **NEVER FORCE**
  It is crucial to never force a sensory-motor strategy. The aim is to increase the individual's pleasure in existence. If the individual does not engage with a strategy, respect this, and perhaps try again later.
- **TRIAL**
  Strategies need to be trialled to gauge the individual's response. They may not respond to all suggestions, but all are worth trying to determine which strategies they are most responsive to. To support optimal engagement, it may be necessary to modify strategies or use only parts of them.
- **PREDICTABILITY**
  In general, it is advised that sensory-motor activities follow the same sequence each time they are introduced, with a clear beginning and end.
- **NOVELTY**
  Over time, individuals may lose interest in sensory-motor activities they once enjoyed. To maintain interest, novelty is key. Understanding which sensory-motor system is being stimulated (e.g., vestibular, proprioceptive, oral-motor) assists in finding alternative ways to maintain engagement. Request an update from an OT if unsure.

Research

Summary of Findings:

Movement

18 studies showing that bouts of exercise reliably **reduced stereotypy, aggression, off-task behavior and elopement**;

Movement input (rocking, swinging, heavy work) can calm dysregulated sensory systems in ASD.

15–30 minutes of moderate–vigorous activity shows **acute improvements in behavior and reductions in stereotypic/repetitive behaviors**,

Three meta-analyses indicating **exercise produces small-to-moderate reductions in stereotypy**, reinforcing movement as a **behavior-calming intervention**

Research

Proprioceptive – Deep Pressure – Vibration

- Study investigated deep-pressure stimulation in 13 young people with autism and severe intellectual disability. Most participants showed **immediate improvements in mood and behaviour** following deep-pressure input.

- Vibration may have **short-term calming or organising effects** for certain forms of repetitive behaviour.

- 2023 systematic review reported that vibration may enhance certain cognitive functions (attention, working memory, processing speed), possibly through increased sensory input to proprioceptive pathways.

Citations

- Lang, R., Koegel, L. K., Ashbaugh, K., Regester, A., Ence, W., & Smith, W. (2010). Physical exercise and individuals with autism spectrum disorders: A systematic review. *Research in Autism Spectrum Disorders*, 4(4), 565–576. authors argue the effect is not merely fatigue, but state regulation via exercise.
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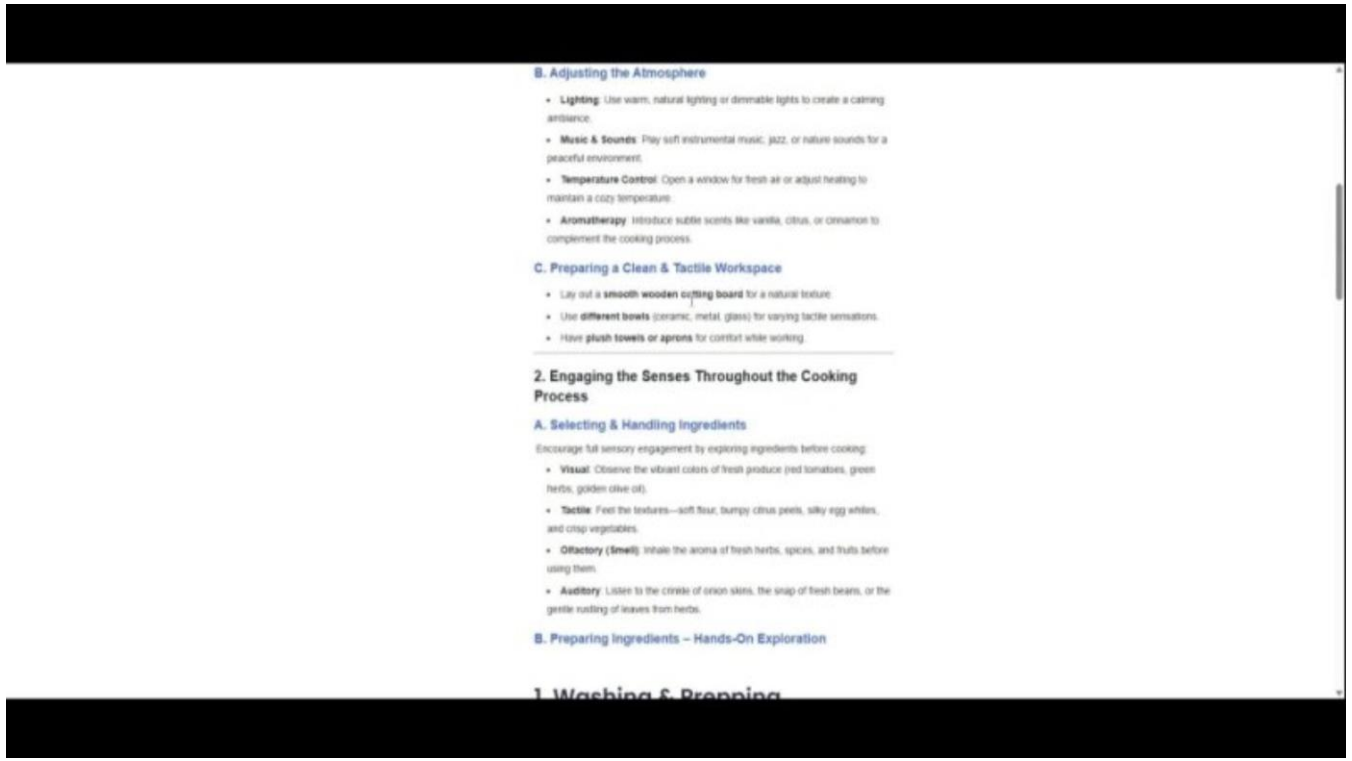
- Tarr, C. W., Rineer-Hershey, A., & Larwin, K. (2020). The effects of physical exercise on stereotypic behaviors in autism: Small-n meta-analyses. *Focus on Autism and Other Developmental Disabilities*, 35(1), 26–35. Three meta-analyses indicating exercise produces small-to-moderate reductions in stereotypy, reinforcing movement as a behavior-calming intervention with plausible mechanisms in autonomic and sensory modulation.
- Bestbier, L., & Williams, T. I. (2017). *The immediate effects of deep pressure on young people with autism and severe intellectual difficulties: Demonstrating individual differences. Occupational Therapy International*, 2017, Article ID 7534972.
- Edelson, S. M., Edelson, M. G., Kerr, D. C. R., & Grandin, T. (1999). *Behavioral and physiological effects of deep pressure on children with autism: A pilot study evaluating the efficacy of Grandin's Hug Machine. American Journal of Occupational Therapy*, 53(2), 145-152.
- Humpheson, J. (2024). *Sensory approaches for adults with severe or profound and multiple learning disabilities: A systematic literature review. British Journal of Occupational Therapy*, 87(3), 129-142.
- **S**ilva, L. M. T., Schalock, M., & Gabrielsen, K. R. (2011). Early intervention for autism with a parent-delivered Qigong massage program: A randomized controlled trial. *American Journal of Occupational Therapy, 65*(5), 550–559. In this randomized controlled trial, parents delivered daily Qigong Sensory Training (QST) massage to preschoolers with autism for five months. Children who received QST showed significant reductions in sensory defensiveness and anxiety and improvements in self-regulation and social engagement compared with controls.

Part 3 - Video – Intro to SensePlanner



Client Centered Approach

- Practices that focus on what matters to the client receiving support
- Talking with the person
- Planning with the person
- Focused on strengths, abilities, skills
- Doing things in a particular way because it works for the client

Customisation

- Activities that encompass sensory input through all eight sensory modalities can be adapted to suit individuals with complex disabilities
- Creativity and detailed task analysis is often required to identify and set up suitable activities
- Supporting processes also need to be set up to promote success, for example use of visual aids and visual timers to assist with activitiy transition
- Timing of activities to promote success is needed, eg. upbeat, energising music being played in the morning, relaxing music at the end of the day
- Sensory profiling by an occupational therapist can be used to guide activity choices for clients with impaired communication

Barriers

- Time constraints of carers and support workers
- Need for increased awareness of the positive impact of engagement in meaningful activity
- Limited access to occupational therapy services

SensePlanner Features

- You don’t have to create a weekly schedule — you can also design a **list or menu of recommended sensory activities** for your client.
- **SensePlanner** includes both **learning and teaching modules** to help you understand and apply sensory principles in practice.
- You can **join our weekly online catch-ups** to learn more about how to design effective sensory interventions for clients.
- You can also **add your own custom activities** — ones you’ve personally designed or adapted.
- If needed, you can **request an Occupational Therapist (that’s us!) to review your client and their schedule online** — this service can be **covered by the NDIS**.
- Finally, SensePlanner includes a **feedback loop**, where data is gathered and stored to help you **refine the sensory schedule over time** — perfect for sharing progress during **multidisciplinary team meetings**.

Support Worker Feedback

The support worker can access a **view-only version** of the person's **SensePlanner schedule**. This includes a link to a **feedback page** where they can quickly answer **four brief questions** about the client's response.

All feedback is **automatically stored in a database** and can be used to **generate charts and summaries** that track and illustrate the client's progress over time.

Did the person show enjoyment during the activity?

- Yes – smiling laughing relaxed posture, or positive vocalisations.
- Neutral - car but not actively engaged or expressive.
- No - vocal distress or signs of agitation.

How actively did they participate in the activity?

- Fully engaged - Initiated or maintained involvement throughout.
- Partially engaged - needed problems or support to stay involved.
- Disengaged – avoided or resisted or did not participate.

Did they require supports or prompts to stay regulated during the activity?

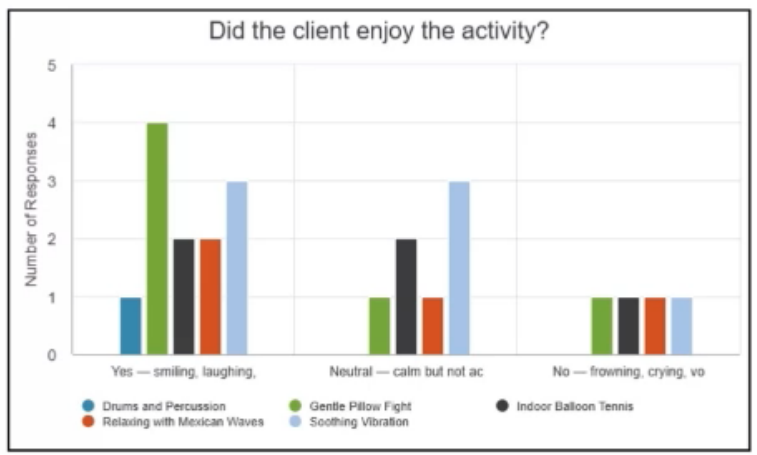
- No - remained calm and regulated independently.
- Occasionally – needed occasional reminders or physical assistance.
- Frequently - required continuous support to prevent distress or physical withdrawal.

What was their state at the end of the activity compared to when they started?

- Improved - more relaxed alert or content.
- No change – state appeared consistent before and after.
- Deteriorated - increased signs of distress, fatigue or withdrawal.

Sensory Activity Scheduler Client Response

Client: test



Return to Client List