Sensory differences and approaches to intervention

Children (and adults) can experience sensory differences that limit their participation or prevent them from doing activities that people of a similar age manage easily. When this happens they may benefit from specialist help. Various names are used to describe the different types of therapy that are available. It is helpful therefore, to think about a child's daily activities and what you hope therapy will achieve. Focusing on meaningful goals and your expectations about therapy outcomes will be useful when discussing intervention options.

Asking the following questions will help you to decide whether an intervention approach is right for a child:

- Will the intervention help my/this child do the everyday activities that he/she needs, wants or is expected to do?
- What evidence is there that this intervention will make a difference to my/this child's daily life?
- What exactly does the intervention involve? What will my/this child be doing?
- How much intervention will be needed – how often and for how long?
- Are parents/carers involved in the therapy process? And if so how?
- How will you know if the intervention has made a difference?

Research shows that parent partnership within occupational therapist intervention is worthwhile and effective, with parent-delivered intervention being equally effective to therapist delivered intervention (Baker et al 2012). Therefore it is vital that parent carers understand the approach being taken and their role within it.

Sensory intervention approaches fall into three main groups. Information included in the table overleaf provides some brief information on these approaches and the evidence of their effectiveness, which we hope will help you decide which approach to choose for your/a child.

Performance or Goal-Oriented Sensory Approaches

- The intention is to manage rather than change the person's sensory needs by:
  - Identifying their sensory strengths and differences
  - Adapting the environment
  - Modifying the task
  - Developing strategies to help the person manage their own sensory needs.
- The theoretical basis for this approach is aligned to occupational therapy models.
- Occupational therapists are skilled in providing these interventions on graduation.

An occupational therapist's knowledge of sensory processing offers families and carers insight into a person's sensory needs, facilitating a better understanding and management of their behaviour (Cohn et al 2000; Dunstan and Griffith 2008).

Evidence suggests self-management strategies can be successful in enhancing performance and participation (Dunn et al 2012) and performance-orientated approaches support a better fit between the young person, their environment and the task (Rodger et al 2010).

Such 'top down' approaches which focus on improving functional activity performance and participation have been identified as the most effective interventions (Novak and Honan 2019).

Sensory based interventions

- These interventions are based on the hypothesis that systematic application of sensory stimulation will improve the way the nervous system interprets and uses sensory information.
- These approaches can be carried out by parent, carer or teacher and therefore fitted into daily routines.
- Minimal specialist equipment is required.

Evidence of the effectiveness of sensory strategies is limited and has not been demonstrated for weighted vests or therapy balls (Case-Smith et al 2015), weighted blankets (Gringras 2014), or the Wilbarger Deep Pressure and Proprioceptive Technique® (Weeks et al 2012). Nor is their evidence that combining interventions into a sensory diet is effective (Devlin et al 2011).

Evidence is also lacking for sound based interventions such as Auditory Integration Training and Therapeutic Listening Programmes (National Autism Centre 2009).

Ayres Sensory Integration Intervention (ASI)®

- Developed by Jean Ayres and known as Sensory Integration therapy, this intervention aims to change a child's sensory processing through direct, intensive therapeutic input
- Input has to be delivered by occupational therapists who have undertaken certified postgraduate training.
- The approach requires a specific physical environment and specialist equipment.

Research into the effectiveness of ASI® suggests that it is ineffective. Whilst some studies do show a positive effect, limitations in methodology means that it is difficult to generalise from these findings with confidence (Case-Smith et al 2015).

A systematic review of the effectiveness of paediatric occupational therapy (Novak and Honan 2019) concluded that ASI® was ineffective in addressing behavioural, function or cognitive outcomes.

NIHR have funded a randomised controlled trial due to report in December 2019. We will use the data to update this briefing. https://ukctg.nihr.ac.uk/trials/trial-details/trial-details?trialNumber=ISRCTN14716440

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