

This document is to aid understanding of occupational therapy related to children and young people with sensory differences. The Occupational Therapy service working within Cambridgeshire Community Services bases its service following the current strongest evidence.

- *How does occupational therapy help a person who may have sensory differences?*

Occupational therapy improves health and well-being by enabling people to participate in activities of daily living that are important to them. Various factors can make it difficult for people to engage in activities that others manage easily, including differences in the way a person processes and responds to sensory information. Sensory differences are often associated with conditions such as autism and ADHD, but can also occur separately. How people manage daily activities (occupational performance) is a consequence of the interaction between **personal** factors (such as their strength, coordination, sensory needs, motivation), the **activity** (e.g. getting dressed, brushing teeth, shopping) and the **environment** (physical, sensory, cultural, institutional). Occupational therapy interventions can focus on any or all these three elements.

Sensory processing difficulties become an issue when they impact on a child or young person's ability to participate in activities that are necessary for their learning and development.

Part of the information gathering is to liaise with schools as well as parents/carers. It is imperative that all information is related back to function and is backed-up with observation to ensure objectivity. According to Schoen et al, 2014, parental and caregiver questionnaires lack validity and are subject to responder bias, often not matching the Occupational Therapists (OT) observation. There is a need for objective data to support parental/proxy report (Schaaf et al 2014b).

- Are there specific qualifications needed to assess and provide provision for a child/young person with sensory differences affecting function?

No. On graduation, Occupational Therapists have the skills to identify an individual's sensory strengths and differences and their impact on daily activities as part of their assessment of a person's occupational performance. The Occupational Therapist can advise on the adaptation of tasks and the environment to enable participation in daily activities. There is no specified level of qualification in sensory processing/integration specified or expected of occupational therapists by the Health and Care Professions Council, the regulator of occupational therapists in the UK.

According to the Professional Standards 2022, as an occupational therapist, we must focus on occupation. All assessment, interventions and outcomes should be centred on occupational performance, engagement and participation in life roles.

- Is it within the OT professional remit to make recommendations about an educational placement?

No. As health professionals, it is not our role to make recommendations about an educational placement. (see page 16 of this document:

<https://councilfordisabledchildren.org.uk/sites/default/files/field/attachemnt/Health%20Advice.pdf>

We should restrict our advice to our area of expertise (i.e. children's occupational performance, factors that affect this and strategies/supports to enable children's occupational performance.

- Is Sensory Processing Disorder a recognized diagnosis in the UK?

No. **Sensory Processing Disorder** (SPD) is not included in the Diagnostic and Statistical Manual (Fifth Edition) or the ICD-10; sensory differences are considered a symptom rather than a diagnosis. The Royal College of Occupational Therapy (RCOT) do not therefore support the use of SPD as a diagnostic label.

- *What is Ayres Sensory Integration Therapy?*

Ayres Sensory Integration Therapy (SIT) is a tool used by some occupational therapists to address a person's sensory needs. SIT aims to change a person's sensory processing through direct, intensive therapeutic input and is delivered by occupational therapists who have undertaken certified postgraduate training. The research evidence is inconclusive regarding the impact of SIT on daily life activities.

If delivered by trained therapists, SIT should not cause harm to the individual. However the intervention is intensive and delivered in a specially-equipped clinical space. Commissioners should consider the educational, social and economic impact for the individual and their family of taking time off school/work for the intervention.

- *What is the evidence for effectiveness of Ayres sensory integration therapy?*

There continues to be much debate and controversy regarding Ayres sensory integration Therapy. Evidence for SIT remains largely anecdotal in nature and there remains little robust scientific evidence to support the use of SIT in the general population.

The Council for Disabled Children, (Jan 2020) published the Sensory Differences and Approaches to Intervention Fact Sheet, and reviewed the three main groups of sensory intervention approaches and found:

- Group 1: Performance or Goal-Oriented Sensory Approaches – intention to manage rather than change sensory needs. – Evidence suggests that these are the most effective interventions.
- Group 2: Sensory Based Interventions – systemic application of sensory stimulation will improve the way the nervous system interprets sensory information. – Evidence of the effectiveness of these strategies is limited.
- Group 3: Ayres Sensory Integration Intervention (ASI) – aims to change a child's sensory processing through direct, intensive therapeutic input. – Evidence suggests that ASI is ineffective.

The Council for Disabled Children also produced a guide to help understand sensory differences and approaches to intervention in line with current evidence;

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:
 - o Identifying their sensory strengths and differences
 - o Adapting the environment
 - o Modifying the task
 - o 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; Durston 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 Horan 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 there 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 Horan 2019) concluded that ASI was ineffective in addressing behavioural, function or cognitive outcomes.

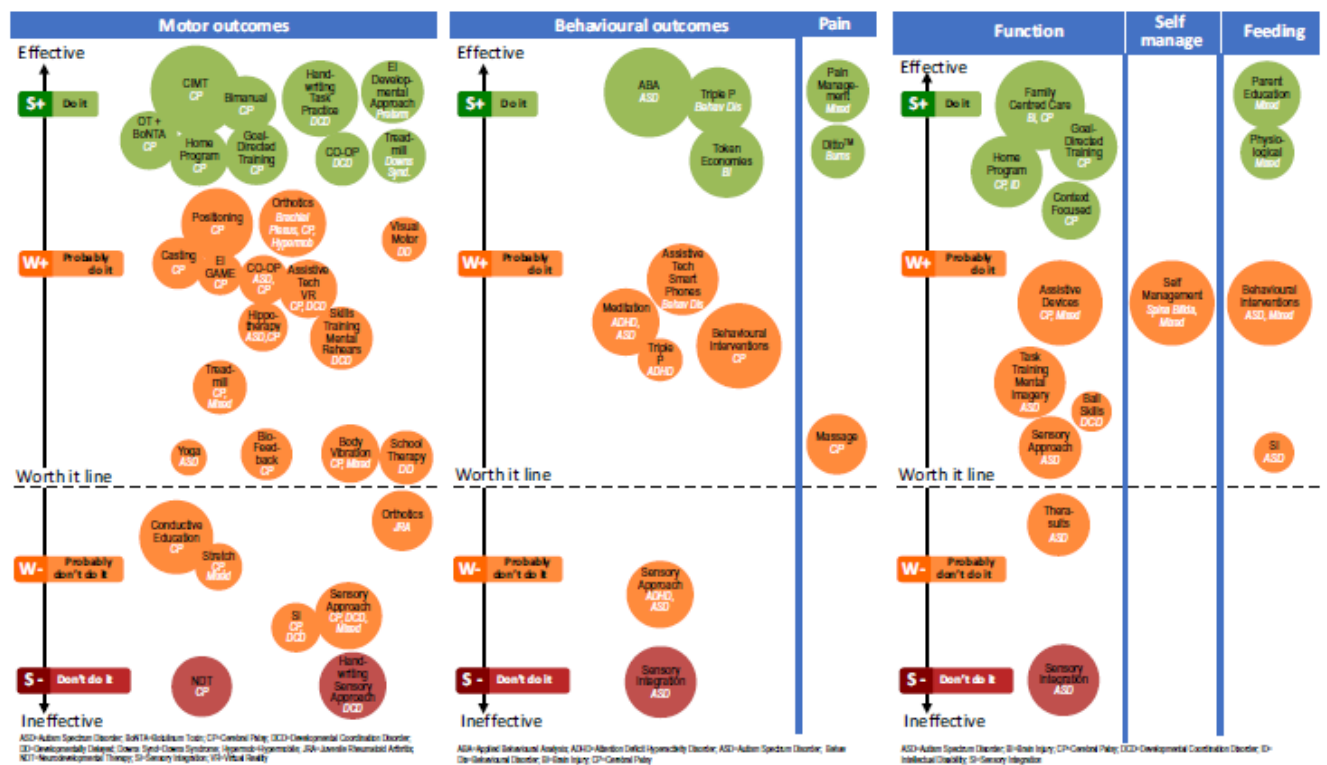
NIHR have funded a randomised controlled trial due to report in December 2019. We will use the data to update this briefing. <https://clinicaltrials.gov/ct2/show/study?term=NIHR%2014%2016%2001&rank=1>

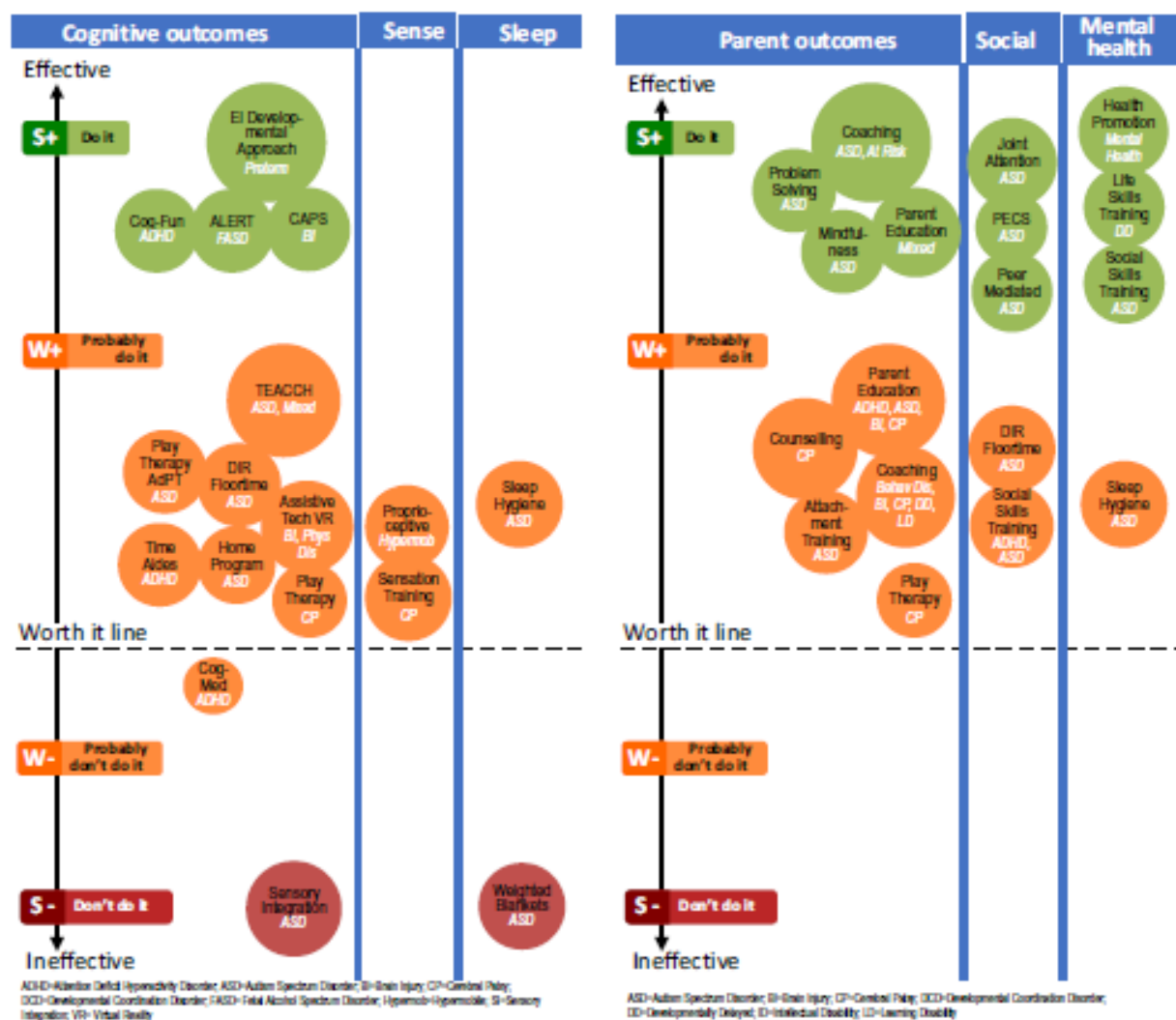
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 National Autism Centre 2009. National Standards Project addressing the need for evidence-based practice guidelines for autism spectrum disorders. Randolph, MA: National Autism Centre.
 Case-Smith, J., Weaver, L., 2015. A systematic review of sensory processing interventions for children with autism spectrum disorders. *Autism*, 19(2), 133–148.
 Novak, E., Horan, J. 2019. Effectiveness of paediatric therapy for children with disabilities: A systematic review. *Australian Occupational Therapy Journal*, Jan, 66(1), 218–275.

Further evidence from a review article on Effectiveness of paediatric occupational therapy for children with disabilities: A systematic review (Iona Novak and Ingrid Honan) produced a chart to illustrate where the robust evidence is and where it is not related to occupational therapy.

EFFECTIVE PAEDIATRIC OCCUPATIONAL THERAPY

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- What does the NICE Guidance say about sensory differences and autism?

Sensory differences are mentioned within the NICE Guidance: Autism spectrum disorder in under 19s: Appendix: Features suggesting possible autism include; Over or under reaction to sensory stimuli, for example textures, sounds, smells and excessive reaction to taste, smell, texture or appearance of food and/or extreme food fads.

NICE Guidance: Autism spectrum disorder in under 19s: support and management; 1.3 specific interventions include; aim to increase the parents', carers', teachers' or peers' understanding of, and sensitivity and responsiveness to the child or young person's patterns of communication and interaction; Also mentioned is to assess

factors that may increase the risk of behaviour that challenges including; the physical environment, the social environment, coexisting mental health problems such as anxiety, changes in routine, the absence of predictability and structure.

- *Is there research which compares effectiveness of sensory integration therapy with other methods of intervention?*

Yes. New research from the National Institute for Health and Care Research (June 2022) compared Sensory Integration Therapy with the standard care offered by most services (which have a focus on delivering sensory strategies and advice which may be in the form of generic written information that is web based or a bespoke leaflet, or through parent groups or one-to-one consultation with carers). It concluded that Sensory Integration Therapy did not demonstrate clinical benefit across a range of outcomes (i.e. behavioural, functional, social, quality of life and wellbeing) over and above standard care and is more expensive. (NIHR 2022).

- *What is Sensory Attachment Intervention?*

Sensory Attachment Intervention (SAI) was developed by Eodain Breathnach, who is an occupational therapist. It has its base in Ayres Sensory integration Therapy (SIT). It is a play based approach used to support children who have sensory processing difficulties arising from attachment issues. The approach is a family based approach in which the parent/carer becomes the therapist with the aim of helping to regulate the child's emotional state. It is accepted through the approach that these activities should be embedded in to the child's activities of daily living at home and at school rather than as a part of a weekly therapy session.

There is no published research as to the effectiveness of this approach as opposed to other child and parent/caregiver joint approaches.

- *What does the NICE Guidance state?*

Children's attachment: attachment in children and young people who are adopted from care, in care or at high risk of going into care; NICE guideline [NG26] Published date: November 2015

Assessment and Diagnosis: This guideline clearly sets out what health and social care provider organisations should do in assessing attachment, the tools that should be used and the diagnostic criteria that should be met as defined in the DSM-5; reactive attachment disorder and disinhibited social engagement disorder or the ICD-10; reactive attachment disorder and disinhibited attachment disorder.

There is no mention of sensory processing differences in the criteria for diagnosis and the recommended assessment tools do not include sensory processing measures. Diagnosis of Attachment Disorder should be made following a comprehensive assessment of parent/caregiver and child interaction together with the recommended tools.

Intervention: The NICE guideline states that if following assessment of attachment difficulties, an intervention is required, refer the child or young person, and their parents or carers, to a service that:

- has specialist expertise in attachment difficulties in children and young people and their parents or carers
- works with other services, including mental health services for children and young people, education and social care
- actively involves children and young people with attachment difficulties in staff training programmes.

It lists interventions that have evidence within the guideline - Sensory Attachment Intervention (SAI) is not mentioned as a recommended intervention.

- *What is Therapeutic Listening?*

Therapeutic Listening (Similar to Auditory Integration Therapy) is a sound-based intervention that was developed to support people of all ages who experience difficulties with sensory processing. It provides stimulation to the auditory system through the use of specifically altered music.

- *What does the evidence say?*

At present there is not enough clinical evidence to support the prescription of this programme as part of any Occupational Therapy treatment model. In 2019 Novak and Honan carried out a systemic review of the Effectiveness of Paediatric Occupational Therapy for Children with Disabilities in which they analysed 52 OT interventions including therapeutic listening. After considering the evidence behind each of these 52 interventions, they found that there were 40 of these had robust evidence to support their application and deemed these the 'do it' / green light interventions. Therapeutic Listening was not included on that list.

In addition to this, in 2020, The University of North Carolina published a study titled Evidence-Based Practices for Children, Youth and Young Adults with Autism in which they conducted a systematic review of intervention research studies published between 1990 and 2017. Certain approaches were eliminated for consideration due to the lack of evidence to support them which included Auditory Integration Training, which uses very similar techniques to the Listening Programme.

In the NICE Guidelines for ASD in under 19's: support and Management Auditory integration therapy is specifically stated as an intervention that should not be used.

- *What does best practice look like?*

OT provision should always relate directly to clearly stated functional outcomes and it is not appropriate to try to remediate an underlying hypothetical basis for a difficulty derived from a theory which itself has a degree of controversy surrounding it. Any remediation must have a direct functional outcome that can be observed.

According to **The Royal College of Occupational therapists** practice briefing on Sensory Integration (April 2015; appendix D);

Occupational Therapists must be clear about their rationale and evidence base for using or recommending any interventions.

A person's sensory issues must be considered in the context of their occupational engagement and performance in the relevant environment and Goals/ outcomes must be clearly related to the occupational engagement, performance and participation of a person and intervention must be regularly reviewed for effectiveness.

Sensory strategies that can be used within the framework of Occupational Therapy models of practice aim to:

1. *Manage (not change) the sensory needs of the person.*
2. *Management through adapting the environment, modifying the task or developing strategies to self-manage their sensory needs*

A recent document produced by The Royal College of Occupational Therapists (2019); Occupational therapy: Unlocking the potential of children and young people states; Occupational therapists offer specialist interventions with the aim of developing independence and self-management rather than dependence on specialist services. These factors have a critical influence on the way that people and families access health and social services across the lifespan.

Further evidence suggests that interventions that focus on modifying tasks/or the environment and that enable parents/carers/teachers/others to help individuals manage their sensory needs are effective, promote self-management and are a good use of occupational therapy resources.

The Royal College of Occupational Therapy (RCOT) advises that “the sensory needs of a person change with time; so, a child’s sensory processing will mature as they get older.” It is therefore imperative that this is understood, and Education and Healthcare Plans are updated to reflect this. Cambridgeshire Community OT service endeavours to be proactive and responsive and has an Advice Line for parents/carers/schools to call for advice without the need for a formal referral.

Cambridgeshire Community Services, occupational therapy service will require a functional difficulty to be clearly outlined as part of the Referral. The child/young person may have sensory differences which have an impact on their function and/or participation (see our website for strategies and useful information and how to contact us; <https://www.cambscommunityservices.nhs.uk/cambridgeshire-children's-occupational-therapy>

**The Local Authority will not apply a blanket policy to provision within an Education, Health and Care Plan and would be prepared to depart from local criteria where directed to do so.*

References:

Council for Disabled Children, Sensory Differences and Approaches to Intervention Fact Sheet (8 January, 2020),

<https://councilfordisabledchildren.org.uk/search/content/sensory%20differences>

NICE guideline [NG26] Published date: November 2015
DSM

<https://www.nice.org.uk/guidance/cg170/chapter/recommendations#specific-interventions-for-the-core-features-of-autism>

NICE National Institute for Health and Care Excellence, Autism Spectrum disorder in under 19s: Support and management. Clinical guideline Published 28 August 2013

Novak, I Honan, I (2019) Effectiveness of paediatric occupational therapy for children with disabilities: A systematic review Australian Occupational Therapy Journal Jun 66(3):258-273

Randell et al 2022, Sensory Integration Therapy for children with autism and sensory processing difficulties: the SenITA RCT Health Technology Assessment 2022 (26) 29 NIHR Journals Library

The Royal College of Occupational Therapy: Practice Briefing on Sensory Integration (April 2015; appendix D)

The Royal College of Occupational Therapists (2019); Occupational therapy: Unlocking the potential of children and young people

RCOT Informed view, Sensory Integration and sensory-based interventions (Published 2021)