Sensory integration therapy for autism spectrum disorders: a systematic review

CRD summary
The authors concluded that sensory integration therapy had no consistently positive effect as a treatment for children with autism spectrum disorders. Despite some potential methodological flaws in the review the conclusion reflects the evidence presented and seems likely to be reliable.

Authors' objectives
To evaluate the effects of sensory integration therapy in the education and treatment of people with autism spectrum disorders.

Searching
MEDLINE, ERIC, Psychology and Behavioural Sciences Collection and PsycINFO were searched for peer-reviewed studies in English. Search terms were reported. Reference lists were scanned and selected journals were handsearched to identify additional articles. All searches were conducted during June and July 2011.

Study selection
Eligible studies had to contain at least one participant diagnosed with an autism spectrum disorder and had to evaluate some form of sensory integration therapy that aimed to decrease symptoms, improve quality of life, increase access to typical environments (such as school or community) and/or improve academic performance. Therapy had to involve at least one of weighted vests, swinging, brushing, joint compression and/or alternative seating (such as therapy balls). Studies of multicomponent interventions were eligible.

Around half of the included studies evaluated multicomponent interventions. Most participants were male (where reported), diagnosed with autism (others were diagnosed with pervasive developmental disorder not otherwise specified and one had Asperger's syndrome) and were aged between two and 12 years. Information on intellectual disability was provided in around one quarter of studies and status was largely moderate or profound. Interventions were delivered mainly by occupational therapists and (where reported) took place in classrooms (approximately half of the studies), clinical therapy rooms or specially adapted sensory integration therapy rooms (one quarter of studies). Outcomes included assessments of self-stimulatory and/or stereotypic behaviours, communication and language skills, social and emotional skills and a number of other skill deficits associated with autism spectrum disorder (reported in the paper).

Three reviewers were involved in study selection. Disagreements were resolved by discussion.

Assessment of study quality
There was no formal internal validity assessment. Instead the authors reported on the certainty of evidence (suggestive, preponderant or conclusive). This was largely hierarchical: suggestive represented studies without a true experimental design; preponderant represented experimental studies with adequate inter-observer agreement, operationally defined dependant variables and enough details to replicate the intervention procedure; and conclusive represented studies that contained all the preponderant attributes and also attempted to control for alternative explanations.

It appeared that quality data were extracted by one reviewer and checked for accuracy by other reviewers. Disagreements were resolved by discussion.

Data extraction
Data were collected on the various outcomes. Effects were classified as positive, negative or mixed (definitions in the paper).

Data were extracted by one reviewer and checked for accuracy by other reviewers. Disagreements were resolved by discussion.

Methods of synthesis
A narrative synthesis was presented. Study differences were presented in the table of study characteristics.

**Results of the review**

Twenty-five studies (217 participants) were included in the review. Most studies were considered to have serious methodological flaws.

Three studies showed positive effects (level of certainty: suggestive in all three studies). Eight studies reported mixed results (level of certainty: six suggestive and two conclusive). Fourteen studies found no benefit in relation to sensory integration therapy (level of certainty: eight suggestive, one preponderant and five conclusive) in relation to sensory integration therapy for participants with an autism spectrum disorder.

**Authors’ conclusions**

Sensory integration therapy had no consistently positive effect as a treatment for children with autism spectrum disorders.

**CRD commentary**

The review addressed a clear question. Inclusion criteria were broad for study design and this was reflected in the yield of eligible studies which varied significantly in methodological quality. Inclusion criteria for participants was not restricted by age but the included studies focused on children which limited the generalisability of findings. Several relevant data sources were searched but the language restriction might mean that relevant articles were missed. The review process was conducted with some efforts to minimise error and bias. Some attempts were made to assess the methodological quality of studies but the scope and appropriateness of criteria used was unclear. Study characteristics offered little information on study design. Overall clinical heterogeneity was apparent. There was very little comparative data to evaluate the relative effects of interventions. A narrative synthesis was appropriate and options were limited for summarising results beyond the level of detail offered by the authors.

The authors’ conclusion reflects the evidence presented and seems likely to be reliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that there was insufficient evidence to support the use of sensory integration therapy in children with autism spectrum disorders.

**Research:** The authors did not state any implications for research.

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