



RESEARCH BRIEF

Evidence for Occupational Therapy using Ayres Sensory Integration[®]

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PURPOSE

The purpose of this research brief is to summarize the current evidence for Occupational Therapy using Ayres Sensory Integration[®]. We hope this will be useful for you, as you communicate about the evidence for this intervention.

(Please note that acronyms are not used to ease communication across professions and groups. We recommend that you do not use acronyms when communicating with others about Occupational Therapy using Ayres Sensory Integration[®].)

TAKE HOME MESSAGE:

There is ample evidence that Occupational therapy using Ayres Sensory Integration results in measurable improvements in individualized goals for autistic children in randomized control trials. It is rated as an evidence-based intervention for autistic children ages 5-9 years of age by well-respected, evidence-based practice organizations (these are listed below). In addition, preliminary evidence of effectiveness in non-autistic children is emerging. There is one single-subject research design in a school-based study that focused on non-autistic children with sensory integrative challenges; and another multiple-baseline study design in a clinic setting. Both show promising results. As with most interventions, additional studies are needed to expand the evidence to wider age ranges, clinical settings, and diverse groups.

Evidence Synopsis

Occupational Therapy using Ayres Sensory Integration® is now rated as an evidence-based intervention for autistic children ages 5-9 years of age meeting the criteria as an Evidence-based Intervention on three evidence-based practice organizations listed below.

As of this writing, there are eight published randomized-controlled trials of Ayres Sensory Integration®. Six of these specifically evaluate Occupational Therapy using Ayres Sensory Integration® (Miller, et al, 2007; Pfeiffer, et al., 2011; Schaaf, et al., 2014; Omairi, et al., 2022; Randell, et al., 2022; Chan, et al. 2023) and follow the Ayres Sensory Integration® Fidelity Measure, although the first two did not measure fidelity (instrument was not available at the time of the study). All of these studies found that the children randomized to the Occupational Therapy using Ayres Sensory Integration® intervention performed significantly better on their individualized goals (measured using goal attainment scales or other methods for rating goal attainment). These findings reached statistical significance. The Schaaf and Omairi study are highly rigorous and used blinded, independent evaluators to rate goals. Further, these two studies also found statistically significant improvements in independence in the areas of Daily Living Skills and Socialization on the Pediatric Evaluations of Disability Inventory (Haley, et al, 1992, 2018). The Chan, et al study found improvements in individualized goals but raters were not blinded. The Randell study was a cost effectiveness trial. Although it did not find that Occupational Therapy using Ayres Sensory Integration® was cost-effective in comparison to usual care (usual care = occupational therapy that did not meet the Ayres Sensory Integration® Fidelity Measure principles), they did find that the Occupational Therapy using Ayres Sensory Integration® group had statistically significant improvements in individualized goals. Further, parents, children and teachers were highly

satisfied with the intervention. Many commented on the positive changes in the child's everyday life.

Two other randomized trials (Iwanaga, et al., 2014 and Kashefimehr, et al., 2017) found statistically significant improvements in the Ayres Sensory Integration® intervention groups but did not indicate if the intervention was occupational therapy. The Iwanaga study showed significant improvements in the Ayres Sensory Integration® group in comparison to the control group (group activities therapy) on the Japanese version of the Miller Assessment for Preschoolers. The Kashefimehr study found statistically significant improvements in the Ayres Sensory Integration® group on the Turkish Short Child Occupational Profile. Both followed the principles of Ayres Sensory Integration® but did not use the Fidelity Measure. Finally, there is emerging evidence for Ayres Sensory Integration in non-autistic children. A single –subject research design study (n =3) conducted in a school found that all participants met or exceeded their goals and showed improvement on functional regulation and active participation in the school setting (Whiting et al., 2023); and a multiple-baseline study (n – 3) found that the participants improved in motor skills and individual goals (Andelin, et al., 2021).

It is best to consider these randomized trials to evaluate the evidence around Ayres Sensory Integration, rather than the existing systematic reviews in the literature, since many of the published systematic reviews studies that do not meet the fidelity criteria for Ayres Sensory Integration (i.e. they include interventions that report on sensory-based interventions or sensory stimulation). Two systematic reviews which do include only studies reporting on Ayres Sensory Integration, are Schoen, et al., 2018 and Schaaf, et al., 2018. One review by Novak and Honan (2019) rated interventions based on outcomes such as gross motor skills, cognition, etc. Unfortunately, they did not include “individualized goals” as a targeted outcome,

and thus missed that Occupational Therapy using Ayres Sensory Integration does improve participation in activities and tasks as measured by individualized goals.

Evidence-Based Ratings of Ayres Sensory Integration

- The National Clearinghouse on Autism Evidence and Practice (<https://ncaep.fpgu.edu/>),
- The Council for Exceptional Children's Standards for Evidence-Based Practices in Special Education (<https://journals.sagepub.com/doi/10.1177/0040059914531389>),
- The U.S. Preventative Services Task Force Guidelines for Evidence Reviews
- <https://www.ncbi.nlm.nih.gov/books/NBK43437/>.

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