



## RESEARCH BRIEF

# Research Supporting the use of the Evaluation in Ayres Sensory Integration®

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### PURPOSE

The purpose of this research brief is to summarize the psychometric properties of the Evaluation in Ayres Sensory Integration® (EASI).

### TAKE HOME MESSAGE:

The EASI tests are designed to assess sensory integration constructs on children ages 3-12 years. The tests show strong validity (i.e., tests accurately measure what they are intended to measure) and reliability (i.e., tests consistently produce the same results under similar conditions). Normative data from over 80 countries will soon be available. The rigor, accessibility, and usability of the EASI ensures that children worldwide can receive comprehensive assessment of sensory integration.

### EVIDENCE SYNOPSIS

The Evaluation in Ayres Sensory Integration® (EASI) is a set of 20 standardized, norm-referenced tests that assess key sensory integrative functions underlying learning, behavior, and participation in activities, tasks, and occupations. These tests are standardized for use with children 3-12 years of age. The EASI measures constructs associated with Ayres Sensory Integration® Theory: sensory perception, postural/ocular/bilateral motor integration, praxis, and sensory reactivity; and is designed to minimize the influences of culture, language, comprehension, and prior testing experience. The tests are available to appropriately trained professionals in a low cost and accessible format. Feasibility, validity, and reliability are reported in the peer-reviewed literature (references below) and summarized below.

### FEASIBILITY TESTING

Mailloux et al. (2018) conducted feasibility and early pilot testing and found significant differences between typical children (n=20) and children with sensory integrative concerns (n=21) on 12 of 14 of the tests studied. Revisions were made based on these data, as well as input from occupational therapists who provided input on test sheets, materials, directions, administration techniques, and scoring procedures. Updated versions were made available for international normative data collection.

### VALIDITY TESTING

All EASI tests underwent validity testing, comparing typically developing children to children with identified sensory integration concerns. The tests demonstrated adequate construct validity as shown in Table 1 below.

### INTERNAL RELIABILITY

Studies by Mailloux et al. (2021, 2023); and Schaaf et al. (2023) reported moderate to strong internal reliability using Rasch analysis as well as traditional statistical analyses as summarized in Table 2 below.

### NORMATIVE DATA

EASI normative data was collected internationally on over 8,000 children aged 3 years to 12 years 11 months from over 80 countries. These data are undergoing analyses to finalize the norms and scoring process.

### CULTURAL ADAPTATIONS

Gandara-Gafo et al. (2021) utilized cultural adaptation methodology to develop a Spanish translation of the EASI, and Holmlund & Orban (2021) developed a Swedish translation of the EASI. Both found that some adaptations to items were needed for understanding. These changes resulted in culturally adapted versions in Spanish and Swedish that are ready for use. Given that the EASI is available in numerous languages, it is expected that more cultural adaptation studies will be published in the future.

**Table 1: Construct Validity of EASI Tests**

Test	n (TYP)	n (SI)	p value	Effect size
Tactile Perception Tests*	174	153	<.0001	small to medium
Vestibular and Proprioceptive Tests	150	84	p <.001-.128	small to large effect sizes
Praxis Tests	163	145	p <.001	small to medium effect sizes

\*Tactile tests used partial n2 for effect size. Values >.14 represent large effect; .06-.14 medium effect; .01-.06 small effect.

**Table 2: Reliability of EASI tests**

Test	Person-Reliability Index	Interpretation
Tactile Perception Tests	.69-.87	Acceptable to high reliability
Vestibular and Proprioceptive Tests*	>.80	High reliability
Praxis Tests	.83-.91	High reliability

\*Does not include the Proprioception: Force Test.



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