



Creating Sensitive, Objective Measures to Demonstrate Positive Outcomes of Ayres SI

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Research Question

Does participation in Ayres SI increase self confidence in children with motor planning deficits?

Rationale

- It is challenging for children with poor motor coordination to perform everyday tasks, impacting their participation in age-appropriate occupations.
- In addition to difficulty executing motor tasks, decreased coordination also impacts self-esteem and self-confidence in children (Grajo, Guzman, Szklut & Philibert, 2020).
- Parents seeking occupational therapy intervention identify self-confidence as one of the most important treatment outcomes (Cohn, Kramer, Schub, & May-Benson, 2014).
- Improved self-confidence is a hypothesized outcome of Ayres Sensory Integration®, supported anecdotally and by preliminary evidence in the literature (Ayres, 2005; Grajo, Guzman, Szklut & Philibert, 2020; Andelin, Reynolds & Schoen, 2021).

Background

- In single-subject design studies, recurring tasks should be conducted regularly to continuously measure predicted outcomes.
- These outcome measures are called probes.
- Study design should ensure that a practice effect would not increase performance on probes over time.
- Researchers must also consider how to measure data objectively and reliably, as well as the sensitivity of a probe to change.
- Probes are challenging to develop, and it is essential to determine their appropriateness and effectiveness in measuring change.

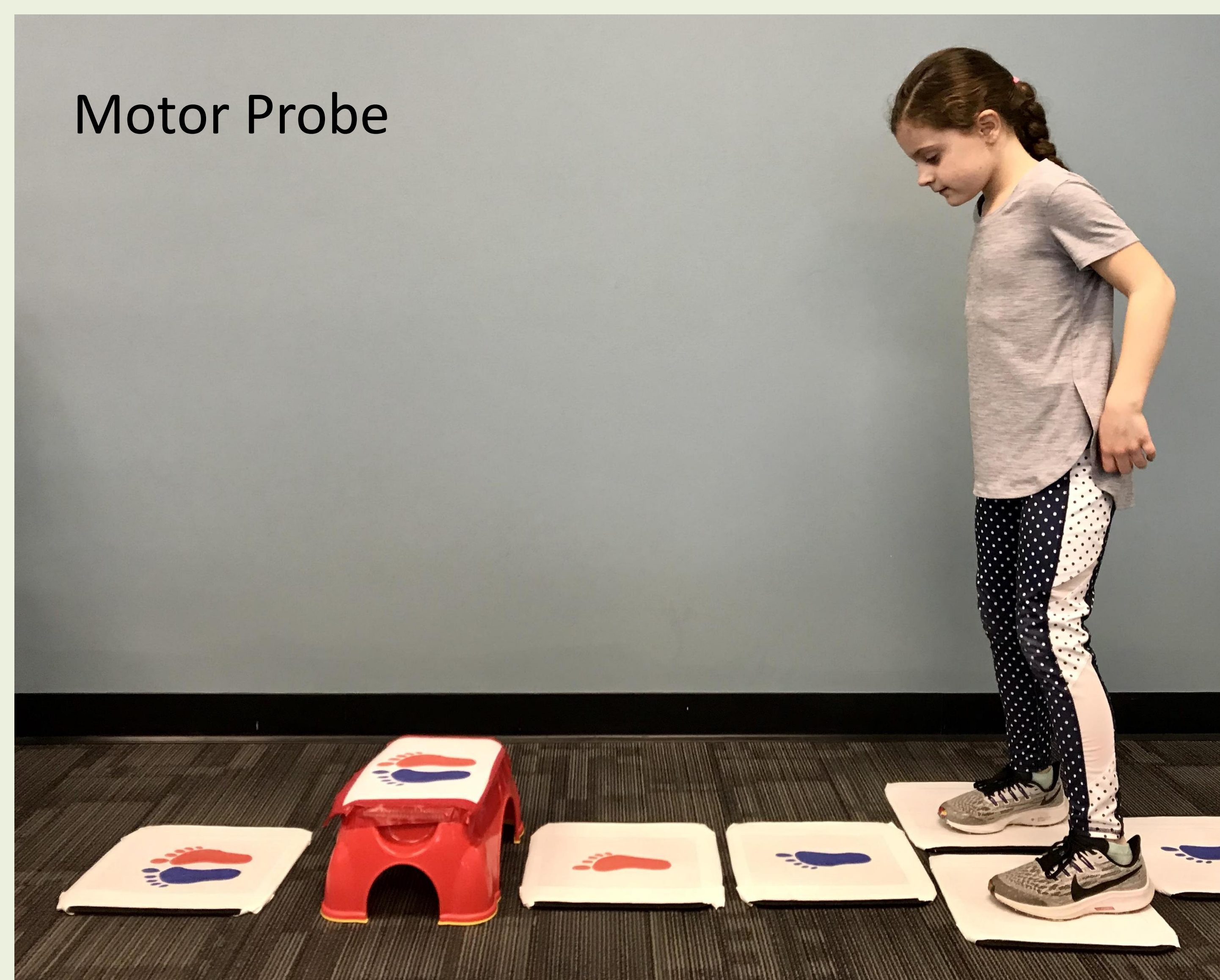


Confidence Probe Development

Considered Measures:

- Timing the duration of participation in novel/challenging tasks before abandoning.
- Observing wording and body language children use when describing their OT session to a parent.
- Determining if children select activities which are a skills-appropriate challenge.
- Coding non-verbal/verbal indicators of confidence throughout the session.
- Utilizing a Smiley Face Likert Scale in future or present tense.
- Utilizing a Smiley Face Likert Scale accompanied with pictures of specific motor activities compared with child's OT therapist.

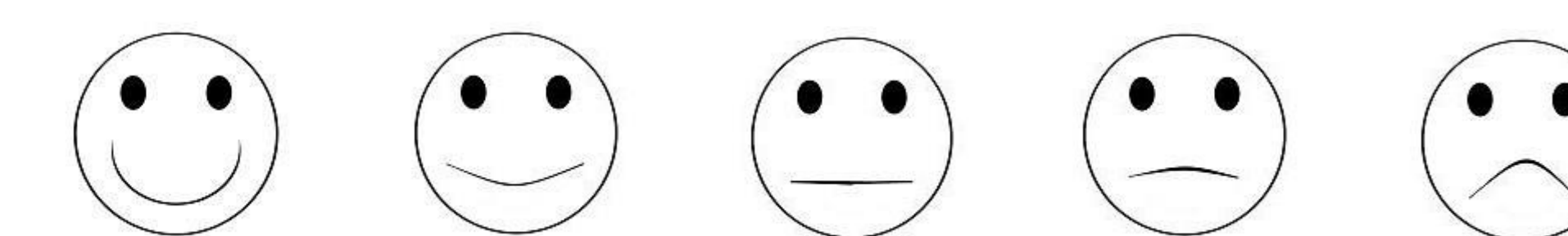
Motor Probe



Motor Probe Considerations

- Develop hopscotch sequence: How long should the sequence be? How difficult should it be? How can we make them equally difficult?
- Prevent practice effect by changing the order of the hopscotch sequence.
- Ensure age-appropriateness and equal difficulty of measure by having two 7-year-old girls complete all arrangements of sequence with no more than 2 errors.
- Establish inter-rater reliability by having coders review video of children completing the sequences and establish 92% agreement coding errors.

Confidence Probe



Challenges/ Implications for Future

- Developing probes that were easy to administer, established a stable baseline, child friendly, not open to a practice effect, age appropriate, equally difficult, and reliable.
- Assessing the reliability and validity of probes before implementing.
- Increasing ability to observe objective outcomes in clinical practice to effectively document progress and positively impact insurance reimbursement.
- Utilizing probes in a single subject design solidifies procedures for future, larger studies.

References

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