Infant Sitting Ability at 6 Months Predicts Language Comprehension and Production at 36 months

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Background

- An infant's ability to interact with their environment changes with every new motor skill learned.[1-3]
- Changes in motor interaction can have cascading effects on the quality of other developing cognitive abilities. [1-5]
- Research suggests a relationship between early gross motor skills and language, with infant sitting ability at 3-months-old demonstrating a cascading effect on language outcomes at 10- and 14-months-old. [4-5]
- Studies linking motor and language development test previous notions about the nature of developing infants: It is believed by some that the development of language is an independent process separate from the development of other cognitive competencies.[6-7]
- **Aim:** The goal of this study was to examine whether sitting ability at 6 months predicts language comprehension and production at 36 months.

Methods

- **Participants:** Thirty infants (15 female), derived from a larger longitudinal study spanning 6 months to 5 years.
- **Touwens Neurological Assessment:** Neuromotor development was tested at 6-months-old using Group III of Touwen's neurological assessment[8]. The Touwen's allows for rating of infant motor skill quality. In this study, we focused on the Touwen's benchmark item for sitting duration, where a score of 0 denoted being unable to sit without support and a score of 4 represents sitting independently longer than 1 minute.
- **Sitting Groups:** Infants who scored a 2 or higher, indicating independent sitting ability for 30 seconds or more, were grouped as "Skilled-Sitters". Infants who scored 1 or less, indicating sitting freely for only a few seconds, were grouped as "Unskilled-Sitters".
- **Language Assessment:** Language was assessed at 36 months using the Preschool Language Scales 5th edition (PLS™-5). The PLS-5 has two subscales: Auditory Comprehension (AC) measuring language comprehension, and Expressive Communication (EC) measuring language production.
- **Statistical Analyses:** Independent samples t-tests were conducted to assess differences between skilled-sitters and unskilled-sitters at 6 months in relation to 36 month language comprehension and production.

Results

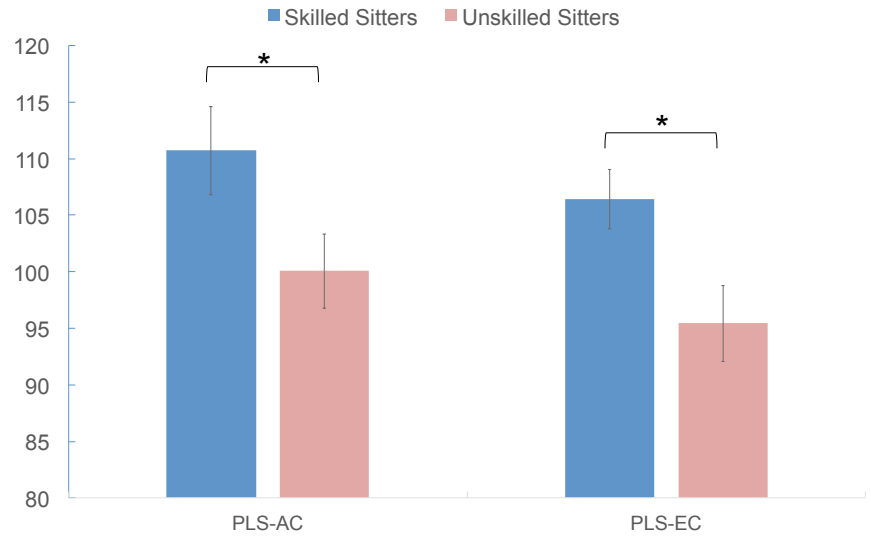

Fig 1: PLS-AC and PLS-EC by sitting skill

PLS-AC, $t(28) = -2.31$ $p = 0.29$, $d = 0.83$
PLS-EC, $t(28) = -2.32$ $p = 0.27$, $d = 0.85$

Compared to unskilled-sitters, skilled-sitters had higher scores for both receptive and expressive language skills at 36 months of age.

Take-Home Point

An infant's ability to sit at 6-months-old predicted distal language outcomes at 36-months-old. Thus, this study further supports the notion that early motor skills have cascading effects on later language outcomes.

References & Acknowledgements

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