# Early Social Cognition as a Predictor of Language Development in Toddlers with Autistic Traits

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## Background

Early social cognition skills—such as social reciprocity, joint attention, and symbolic understanding—are foundational for language development. In toddlers with autistic traits, these skills may be atypical or delayed, potentially influencing later communicative abilities.

## Objective

To investigate the predictive relationship between early social cognition skills (ESB) and subsequent language skills in toddlers with autistic traits.

## Methods

- **Participants:** Toddlers with autistic traits identified through M-CHAT-R/F screening in Finnish child health clinics
    - The study is part of the Gaze@Toddler project (Figure 1). At the time of the study, 37 children had completed the 36 month assessment, of whom 31 were included in the present study.
- **Study design:** Prospective longitudinal follow-up with repeated assessments
- **Statistical analyses:**
    - Spearman rank correlations
    - Linear regression analyses
    - Hierarchical regression models

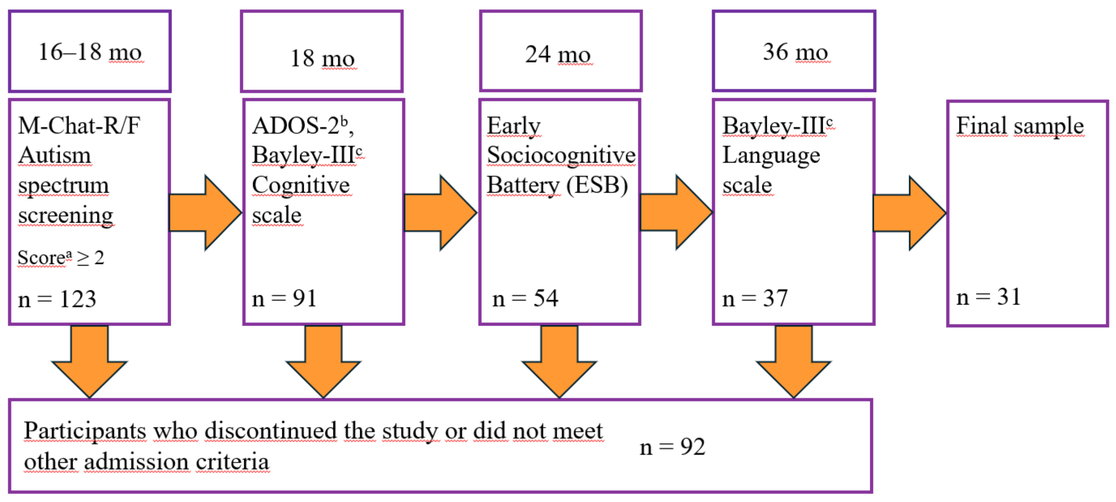


**Fig 1.** Timeline of participant age and assessment methods in the Gaze@Toddler project

## Results

Linear regression analyses revealed that early social cognition skills at age two significantly predicted both language comprehension (adjusted $R^2$ = .411, $p < .001$) and production (adjusted $R^2$ = .369, $p < .001$) at age three. Autism traits and general cognitive abilities did not significantly predict language outcomes. Hierarchical regression showed that social reciprocity was the strongest individual predictor of both language domains. Joint attention predicted comprehension but not production, while symbolic understanding did not significantly predict either.

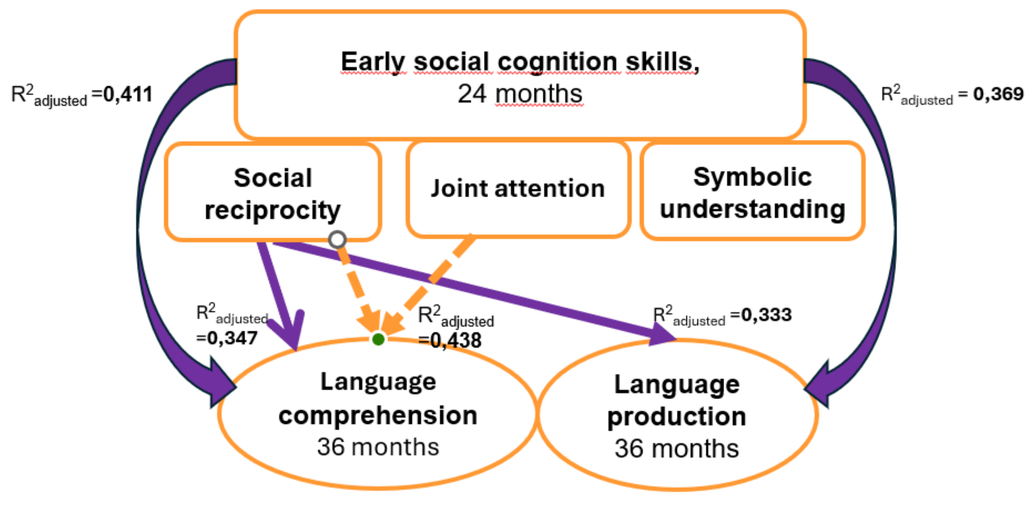


**Fig 2.** Statistically significant associations in which early social cognition skills or sub-areas of them predicted linguistic skills.The dotted line depicts the combined effect of social reciprocity and shared attention.

## Conclusions

Findings suggest that early social cognition skills, particularly social reciprocity, are robust predictors of later language abilities in toddlers with autistic traits.

These results support the inclusion of social cognition assessments in early speech-language evaluations and highlight the potential of early interventions targeting these skills to enhance language development.

The ESB could be a clinically useful tool, especially for children with limited verbal output. Future research should explore these relationships in larger samples and across neurotypical and neurodivergent populations.

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