

From Childhood through Adolescence Early Parenting is Associated with the Development of Neural Reward Responsiveness

A recent study, found that early parenting is associated with the development of reward responsiveness from late [childhood](#) through adolescence.



Study

The researchers analyzed data from 465 young people with usable [EEG data](#) at one or more assessment waves enrolled in the Stony Brook Temperament Study, an ongoing prospective community cohort study. The parenting analyses included 457 participants, whereas the stress analyses included 464. Most families participating in the study were White and middle-class, and half had college-level or higher education.

Participants underwent assessments every three years from age 3 through age 18. RewP was measured at approximately ages 9, 12, 15, and 18 in response to a [monetary reward](#) task administered as part of a larger EEG assessment battery.

The researchers also assessed [maternal parenting behavior](#), analyzing only maternal data because more than 95% of parents who completed the teaching tasks were mothers, using observed parent-child interactive teaching tasks. The parameters included parent support, confidence, instruction, intrusiveness, and hostility.

Stress exposure was also examined at age 3 with the Preschool Age [Psychiatric Assessment](#) (PAPA), which captured cumulative stressful life events from birth to age 3. Maternal lifetime depression was also assessed when the child was 3 and 9 years old.

Results

The findings suggest that early parenting may be associated with the development of neural reward responsiveness across childhood and adolescence, potentially providing one pathway through which early experiences relate to later [health](#) and well-being.

The RewP to both winning and losing feedback showed a quadratic trajectory over the assessment period. The primary analyses focused on RewP to winning feedback. This supports the nonlinear pattern of development across childhood and [adolescence](#).

Only early positive [parenting behavior](#) was positively associated with higher modeled RewP to winning feedback at the initial EEG assessment and with a steeper rise from late childhood to mid-adolescence, followed by a sharper decline by late adolescence in RewP to winning over time. Negative parenting was not significantly associated with RewP to winning feedback at the initial EEG assessment.

However, higher observed negative parenting at age 3 was associated with a weaker increase in RewP to win over time, reflected in both the linear and [quadratic trends](#). Conversely, associations with early stress exposure were not statistically significant.

The study had several limitations, such as the possibility that asking parents to teach their children during the task increased parental intrusiveness, which could have affected the observed parenting behavior. Other approaches might help capture [parenting styles](#) in a more natural context across different stages of development.

The sample was predominantly White, and the [parenting analyses](#) were limited to mothers, limiting the generalizability.

Positive and negative parenting behavior were closely correlated, making it more difficult to identify which parenting dimension was more strongly associated with the reward responsiveness trajectory. Additionally, after accounting for [neural responses](#) to losing as a time-varying covariate, only negative parenting was still associated with the reward responsiveness trajectory. When the researchers instead used a win-minus-loss difference score, neither parenting measure predicted the trajectory.

Conclusion

Taken together, these findings suggest that parenting behaviors observed at a single assessment point in [early childhood](#) were associated with the developmental trajectory of reward responsiveness through late adolescence.

The authors suggest that they “provide further empirical evidence as to how preventive interventions targeting [parent-child interactions](#) could support resilience across adolescence.” However, the observational study cannot establish that changing parenting behavior would alter reward responsiveness.

Source:

<https://www.news-medical.net/news/20260722/Parenting-quality-at-age-3-predicts-adolescent-reward-responsiveness.aspx>