

BIOLOGICAL SIGNATURES OF EMOTION REGULATION IN CHILDREN

by

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Emotion regulation (ER) is a key predictor of positive adjustment throughout the lifespan. Despite decades of research on discrete ER strategy use, ER may be more accurately measured in terms of the ability to flexibly modify emotions based on context demands. While regulatory flexibility has been linked to emotional adjustment in adults, little is known about flexibility in children, including how parent-child context influences biological processes underlying ER. This study evaluated the late positive potential (LPP) and respiratory sinus arrhythmia (RSA), biological signatures of ER flexibility, as context-sensitive predictors of child ER and emotional adjustment. Eighty-six (44 female; $M_{age} = 6.94$, $SD = 1.13$) 5-to-8-year-olds completed a Directed Reappraisal Task (DRT) in which unpleasant pictures were paired with either reappraisal or negative interpretations while EEG and ECG were recorded. Social context was systematically manipulated such that children either completed the task alone, with parent present but not interacting, or with parent scaffolding child ER. ECG was recorded while dyads completed two emotionally challenging behavioral tasks. Both the LPP and RSA were sensitive to emotional context during the DRT, and predicted adaptive child ER behavioral strategy use. A strength of the LPP was its sensitivity to social context. Neurocognitive flexibility indexed by the LPP was bolstered by experimentally-manipulated parent presence or scaffolding of child ER during the DRT, and also by spontaneous patterns of behavioral parent scaffolding. In contrast, while RSA was not sensitive to social context, greater physiological flexibility predicted greater parent-reported ER, and fewer symptoms of psychopathology. Taken together, results highlight the importance of bio-behavioral multimethod approaches to examine context-sensitive biological signatures of regulatory flexibility in children.

Keywords: Emotion regulation, child development, the late positive potential, respiratory sinus arrhythmia, social context