



EXAMINING EPIGENETIC PROCESSES IN INFANTS EXPOSED TO PRENATAL STRESS

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There is a critical gap in our understanding of the mechanisms by which early-life stress may impact neurobehavior and developmental outcomes (Conradt, 2017). We have identified that infants who experience stress during pregnancy may show epigenetic adaptations (Conradt, 2017). The purpose of this study was to examine how epigenetic processes could be related to maternal mood and newborn behavior. The application of epigenetic methods for analyzing human behavior may contribute to the development of children's behavior and physiological response to stress (Conradt, 2017). The study of epigenetics on newborns can aid in the identification of the mechanisms by which early-life stress influences development and also determine the sensitivity of these exposures (Conradt, 2017).

The study participants were stressed pregnant women in their third trimester. The principle prenatal measures for the study included a self-report assessment of stress exposure during pregnancy, maternal hair samples for cortisol output analysis, physiological reactivity during stress tasks, and an interview to assess stress. Twenty-four hours after birth, the mother completed a questionnaire evaluating maternal distress, and the neonate was administered a newborn-examination. Furthermore, a placenta and saliva sample was obtained from the neonate for epigenetic analysis. During the 7-month follow-up visit, the behavior of the infant was examined and correlated with the mother's prenatal stress. Throughout this examination, a sample of the infant's saliva and buccal cell were collected for cortisol and DNA analysis. At this stage, a sample of the mother's hair was obtained to measure cortisol output. Subsequently, the infant's neural responses to different stimuli were recorded during an electroencephalography session.

In the future, we will conduct a follow-up assessment at 18 months. We will examine mothers' and toddlers' physiological response to stress in a similar manner to the previous sessions. Data will be collected and analyzed for further evaluation of the effect of prenatal stress during early infant life. By studying the impacts on infants caused by the dysregulated stress of their mothers, we can identify stress-related epigenetic markers.

References

Conradt, E. (2017). Using Principles of Behavioral Epigenetics to Advance Research on Early Life Stress. *Child Development Perspectives*, *11*(2), 107–112.
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