Abstract

Effects of Prenatal Cannabis Exposure
on Offspring Emotional Development and Stress Response

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While cannabis may be used by women during pregnancy, its effects on their offspring's developing stress response system are still largely unknown. The binding sites for the active chemicals in cannabis are operational at early time points in fetal development and are expressed in key limbic brain structures. The body's natural endocannabinoid system serves as an important regulator of stress response. Longitudinal studies have associated prenatal exposure with increased fearfulness and mood disturbances in offspring, but despite the growing evidence of emotional dysfunction, there remains a critical gap in knowledge explaining how early prenatal exposure may lead to future affective pathology.

The purpose of the current study was to attempt to fill in this gap by investigating deviations in stress-related hormone concentrations at early developmental time points. Cannabis exposure was associated with significantly higher levels of infant cortisol and higher levels of dehydroepiandrosterone (DHEA), both hormones that play an important role in the regulation of the stress response system. This study reports hormone alterations in substance-exposed offspring that may underlie limbic dysfunction in infancy and beyond.