

Prenatal Cocaine Exposure Impairs Infants' Response to Stress

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(PhysOrg.com) -- Infants exposed prenatally to cocaine react more emotionally to stress and appear to have fewer stress-reducing coping strategies than infants with no cocaine exposure, researchers at the University at Buffalo's Research Institute on Addictions (RIA) have shown.

The study, carried out with 7-month-old infants, is one of the few conducted to date to examine the effects of prenatal cocaine exposure on the regulatory system beyond the newborn period.

This research, led by Rina Das Eiden, Ph.D., a developmental psychologist and RIA senior research scientist, was published in the January/February, 2009, issue of *Neurotoxicology and Teratology*.

Eiden also is research associate professor in UB's Department of Pediatrics in the School of Medicine and Biomedical Sciences, and associate professor in the Department of Psychology in UB's College of Arts and Sciences.

Eiden first examined reactivity, defined as how quickly and intensely the infants responded to stress. Next, she measured regulation, defined as the number of strategies the infants used to cope with stress.

Assessments were conducted in the RIA Infant Lab, a warm, family-room-like setting. Mothers or caregivers were asked to place their infant in a high chair with an attractive toy and stand behind the child. The

infant was allowed to play with the toy for 30 seconds, followed by 30 seconds when the mother prevented her child from reaching the toy. This sequence then was repeated a second time.

Results showed that compared to cocaine-free infants, babies exposed to the drug prenatally exhibited greater anger and sadness, and reacted more quickly as stress increased. The non-exposed infants tended to be relatively stable in their reactivity during the assessments.

Cocaine-exposed infants failed to increase the number of strategies to cope with or regulate their emotional reactions, while non-exposed infants used more regulatory behaviors to comfort themselves, results showed.

Regulatory or self-comforting behaviors included repetitive motor actions, sucking and gross motor movements. Additional attempts by the infants at self-regulation included looking away from the toy, or looking toward the mother, the technician or another person to distract attention away from the unavailable toy.

A trained research staff rated the infants' expressions of anger, frustration or sadness using standardized research measures rather than depending on a parent or caregiver's perceptions.

Provided by University at Buffalo

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