

**Drug addicted Mothers show reduced Brain Reward Response to their Infants:  
Can Oxytocin reverse the Trend?**

Lane Strathearn, M.D., Ph.D.

Professor of Pediatrics - Neurology and Developmental and Behavioral Pediatrics  
University of Iowa

Lane Strathearn is author or co-author on more than 20 empirical and review papers related to the neuroscience of parenting and relationships. He has presented at numerous national and international conferences and is recipient of four multi-million dollar federal grants related to brain responses of substance abusing parents. One of these involves a clinical trial of an oxytocin intervention.

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Maternal drug addiction constitutes a major public health problem affecting more than 150,000 children each year, with high rates of child abuse and neglect reported in affected families. These mothers almost universally show evidence of unresolved trauma in the Adult Attachment Interview. Unlike many mothers who find engaging with their own infants to be a uniquely rewarding experience, mothers with addictions may be less able to respond appropriately to their infants' cues, finding them less intrinsically rewarding and more stress invoking. However, little is known about the ways in which drug addiction alters brain function underlying maternal behavior, and the potential effect of unresolved trauma. Prior neuroimaging studies have shown that infant cues and drugs abuse similarly activate dopaminergically innervated brain reward circuits, suggesting the possibility that drugs may co-opt the brain circuitry critical for maternal caregiving. Here, we report on a functional magnetic resonance imaging study documenting that mothers with addictions demonstrate reduced activation of reward regions when shown cues of their own infants. We further report on preliminary data suggesting that oxytocin, a hormone involved in social affiliation and maternal bonding, may be effective in reversing the disrupted brain responses in these mothers. Understanding the impact of unresolved trauma and attachment disturbance on addiction is an area of ongoing research.