



American College of Neuropsychopharmacology

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CONTACT: Tamara Moore, (202) 745-5114
tmoore@gymr.com

Children of Depressed Mothers More Likely Diagnosed with Mental Disorders

*Study finds role of Oxytocin helps lessen the impact of
maternal depression on children*

WAIKOLOA, HI (December 8, 2011) – New research studying the impact of postpartum depression on children’s social and emotional development found that Oxytocin, a hormone associated with love and produced naturally in the body, can help protect children from the negative effects of maternal depression. The study, presented today at the American College of Neuropsychopharmacology annual meeting, shows children born to depressed mothers are at greater risk of mental disorders, but this risk can be lessened depending on genetic factors related to Oxytocin functioning.

Led by Ruth Feldman, PhD, Professor at the Department of Psychology and the Gonda Brain Sciences Center, Bar-Ilan University in Israel, researchers found children exposed to maternal depression throughout the first year of life had a higher risk of mental disorders by age six. Sixty percent of children born to mothers who were consistently depressed across the first year of the children's lives exhibited mental disorders, including mainly anxiety disorders and conduct disorders. These children demonstrated lower social engagement with their mothers, lower playfulness and creativity, diminished social involvement and were less verbal and demonstrated lower levels of empathy to the distress and pain of strangers. This group of children, similar to their mothers, also showed disordered functioning of the Oxytocin system, demonstrated by both lower levels of Oxytocin in their saliva and a high risk variant on the Oxytocin receptor (*OXTR* rs2254298). Individuals with two “G” alleles on this variant of the Oxytocin receptor are at greater risk to develop depression.

In comparison, only 15% of children born to mothers with no mental disorder were diagnosed with a mental disorder by age 6.

Researchers studied the mental health status, Oxytocin levels, genetic variation in Oxytocin receptors and interactions in 155 mother-child pairs during an at-home visit when the child was six-years old. These pairs were recruited from a larger sample of nearly 2,000 mothers surveyed for mental health symptoms at the birth of their child, and then again at six and nine months after birth. The 155 pairs were initially observed and diagnosed with any mental disorders at a nine month home visit. Of the 155 pairs participating at the six-year old home visit:

- 30% of mothers were diagnosed with depression, and had demonstrated symptoms of depression throughout the child's first year of life. On average, these mothers had disordered Oxytocin functioning and produced less peripheral Oxytocin in their saliva. Among these mothers there was a greater prevalence of the risky variant of the Oxytocin receptor gene.
- 8% of mothers were diagnosed with either sub-clinical depression (4%) or anxiety (4%); and
- 62% of mothers showed no signs of mental disorders and were also free of symptoms throughout the child's first year.

While a majority of children born to depressed mothers exhibited mental disorders, 40% of these children did not. These children demonstrated more normal functioning of the Oxytocin system, no signs of mental illness and better social engagements and empathic behaviors. These children, were born to depressed women who showed less disruptions of the Oxytocin systems. These children had the less risk-related "A" allele variant on the Oxytocin receptor gene and typical levels of Oxytocin in their saliva.

“We found the functioning of the Oxytocin system helps to safeguard some children against the effects of chronic maternal depression,” said Feldman. “This study could lead to potential treatment options for postpartum depression and methods to help children develop stronger Oxytocin systems.”

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ACNP, founded in 1961, is a professional organization of more than 900 leading scientists, including four Nobel Laureates. The mission of ACNP is to further research and education in neuropsychopharmacology and related fields in the following ways: promoting the interaction of a broad range of scientific disciplines of brain and behavior in order to advance the understanding of causes, prevention and treatment of diseases of the nervous system including psychiatric, neurological, behavioral and addictive disorders; encouraging scientists to enter research careers in fields related to these disorders and their treatment; and ensuring the dissemination of relevant scientific advances in these disorders.