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Oxytocin Produces More Engaged Fathers and More Responsive Infants

Reports new study in Biological Psychiatry

Philadelphia, PA, December 10, 2012 – A large body of research has focused on the ability of oxytocin to facilitate social bonding in both marital and parenting relationships in human females. A new laboratory study, led by Dr. Ruth Feldman from Bar-Ilan University in Israel and published in the current issue of *Biological Psychiatry*, has found that oxytocin administration to fathers increases their parental engagement, with parallel effects observed in their infants.

Oxytocin is a neuropeptide that plays an important role in the formation of attachment bonds. Studies have shown that intranasal administration of oxytocin increases trust, empathy, and social reciprocity.

In this study, researchers examined whether oxytocin administration to the parent enhances physiological and behavioral processes that support their social engagement with their infant and improves their parenting. They also examined whether oxytocin effects on the parent's behavior would affect related physiological and behavioral processes in the infant.

Thirty-five fathers and their five-month-old infants were observed twice, once after oxytocin administration and once after placebo administration. The fathers received the nasal sprays in a solitary room while their infant was cared for in another room. After 40 minutes, fathers and infants were reunited and engaged in face-to-face play that was micro-coded for parent and child's social behavior. Salivary oxytocin levels were measured from the fathers and infants both before and several times after the drug administration.

"We found that after oxytocin administration, fathers' salivary oxytocin rose dramatically, more than 10 fold, but moreover, similar increases were found in the infants' oxytocin. In the oxytocin conditions, key parenting behavior, including father touch and social reciprocity, increased but infant social behavior, including social gaze and exploratory behavior, increased as well," explained Feldman.

In addition, respiratory sinus arrhythmia – a measure that indexes better autonomic readiness for social engagement – was higher in both parent and child.

"We should not be surprised that social bonding in male parents is affected by many of the same biological mechanisms that have been identified for females," commented Dr. John Krystal, Editor of *Biological Psychiatry*. "The question arising from this study is whether there is a way to harness the 'power' of oxytocin to promote paternal engagement with their infants in families where this is a problem."

Feldman concluded, "Such findings have salient implications for the potential treatment of young children at risk for social difficulties, including premature infants, siblings of children with autism, or children of depressed mothers, without the need to administer drug to a young infant."

The article is "Oxytocin Administration to Parent Enhances Infant Physiological and Behavioral Readiness for Social Engagement" by Omri Weisman, Orna Zagoory-Sharon, and Ruth Feldman (doi: 10.1016/j.biopsych.2012.06.011). The article appears in *Biological Psychiatry*, Volume 72, Issue 12 (December 15, 2012), published by Elsevier.

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Notes for editors

Full text of the article is available to credentialed journalists upon request; contact Rhiannon Bugno at +1 214 648 0880 or Biol.Psych@utsouthwestern.edu. Journalists wishing to interview the authors may contact Ruth Feldman at +972 3 531 7943 or feldman@mail.biu.ac.il.

The authors' affiliations, and disclosures of financial and conflicts of interests are available in the article.

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