

# Level of Oxytocin in Pregnant Women Predicts Mother-Child Bond

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Humans are hard-wired to form enduring bonds with others. One of the primary bonds across the mammalian species is the mother-infant bond. Evolutionarily speaking, it is in a mother's best interest to foster the well-being of her child; however, some mothers just seem a bit more maternal than others do. Now, new research points to a hormone that predicts the level of bonding between mother and child.

In animals, oxytocin, dubbed "the hormone of love and bonding," is critically important for the development of parenting, is elicited during sexual intercourse, and is involved in maintaining close relationships. Animals with no oxytocin exhibit slower pup retrieval and less licking and self-grooming. These findings implicate oxytocin in the bonding process, but little research has been done on this relationship in humans.

Ruth Feldman, psychology professor at Bar-Ilan University in Israel, conducted the first study to demonstrate the links between oxytocin and bonding in human mothers. Feldman and colleagues measured plasma oxytocin from sixty-two pregnant women during their first trimester, third trimester, and the first postpartum month.

They also observed the mother and child interact, defining the level of attachment along four aspects: gaze, affect, touch, and vocalization. Stronger attachment would mean that the mother focused her gaze mostly on the child, exhibited a positive energy towards the child, maintained constant affectionate and stimulating touch with the child, used a "motherese" speech with the child, and these species-typical maternal behaviors were adapted to the infant's alert state.

After the mothers completed an extensive survey and an interview on their bond-related thoughts, feelings, and behaviors, the researchers computed the link between levels of oxytocin and bonding.

The results are fascinating. Initial levels of oxytocin at the first trimester predicted bonding behavior. Therefore, mothers with a high level of the hormone at the beginning of the pregnancy engaged in more of the aforementioned bonding behaviors after birth.

Additionally, mothers who had higher levels of oxytocin across the pregnancy and the postpartum month also reported more behaviors that support the formation of an exclusive relationship (i.e. singing a special song to the infant, or bathing and feeding them in a special way). These mothers were also more preoccupied by thoughts of checking on the infant, the infant's safety when they are not around, and the infant's future.

This study, which appears in the November issue of *Psychological Science*, a journal of the Association for Psychological Science, suggests that women with higher levels of oxytocin during their first trimester are primed to the formation of an exclusive bond with their infants. Oxytocin seems to be

preparing mothers to engage in bonding behaviors. The findings also show that oxytocin is related to the mental, as well as the behavioral, aspect of bonding. More generally, this study confirms that there is a cross-species continuity in mechanisms that underlie species-specific expressions of bonding.