Society for Neuroscience - New Study: Oxytocin

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HORMONE AFFECTS DISTANCE MEN KEEP FROM UNKNOWN WOMEN THEY FIND ATTRACTIVE

Finding suggests oxytocin may promote fidelity

Washington, DC — Men in committed relationships choose to keep a greater distance between themselves and an unknown woman they find attractive when given the hormone oxytocin, according to new research in the November 14 issue of *The Journal of Neuroscience*. The findings suggest oxytocin may help promote fidelity within monogamous relationships.

Oxytocin plays a vital role in triggering childbirth and facilitating nursing. The hormone, which is produced in a region of the brain called the hypothalamus, is also involved in the formation of social bonds. In humans and other animals, this brain chemical is known to promote bonds between parents and children, and between couples. Additionally, previous studies have shown oxytocin increases trust among people. However, scientists had yet to determine what, if any, role oxytocin played in maintaining monogamous human relationships.

In the current study, led by René Hurlemann, MD, PhD, of the University of Bonn, researchers found that men in committed relationships who were given oxytocin kept a greater distance when approaching or being approached by an unknown woman they found attractive compared with those given a placebo. In contrast, oxytocin had no effect on single men.

“Previous animal research in prairie voles identified oxytocin as major key for monogamous fidelity in animals,” Hurlemann said. “Here, we provide the first evidence that oxytocin may have a similar role for humans.”

Researchers administered oxytocin or placebo via a nasal spray to a group of healthy, heterosexual males. Forty-five minutes later, the men were introduced to a female experimenter that they later described as “attractive.” As the experimenter moved toward or away from the study volunteers, the men were asked to indicate when the experimenter was at an “ideal distance” as well as when the experimenter moved to a distance that felt “slightly uncomfortable.”

“Because oxytocin is known to increase trust in people, we expected men under the influence of the hormone to allow the female experimenter to come even closer, but the direct opposite happened,” Hurlemann said. The researchers found oxytocin led the men in committed relationships, but not those who were single, to keep a greater distance (10-15 cm) between themselves and the woman.

The effect of oxytocin on the monogamous men was the same regardless of whether the female experimenter maintained eye contact or averted her gaze, or if the men were the ones approaching or withdrawing from the experimenter. Oxytocin also had no effect on the men’s attitude toward the female experimenter — both those who received the oxytocin and the placebo rated the female experimenter as being equally attractive.

In a separate experiment, the researchers found oxytocin had no effect on the distance men kept between themselves and a male experimenter.

“In monogamous prairie voles, we know that oxytocin plays an important role in the formation of the pair bond,” said Larry Young, PhD, an expert on oxytocin at Emory University who was not involved in the study. “This study suggests that the general role of oxytocin in promoting monogamous behavior is conserved from rodents to man.”

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The Journal of Neuroscience is published by the Society for Neuroscience, an organization of more than 42,000 basic scientists and clinicians who study the brain and nervous system. More information on hormones, love, and the brain can be found on *BrainFacts.org*.

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