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Hormone may help protect monogamous relationships

Study shows that monogamous men given the hormone oxytocin will put extra space between themselves and an attractive woman they've just met.

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If retired Army Gen. David H. Petraeus had gotten an occasional dose of supplemental oxytocin, a brain chemical known to promote trust and bonding, he might still be director of the Central Intelligence Agency, new research suggests.

A study published Tuesday in the Journal of Neuroscience has uncovered a surprising new property of oxytocin, finding that when men in monogamous relationships got a sniff of the stuff, they subsequently put a little extra space between themselves and an attractive woman they'd just met.

Oxytocin didn't have the same effect on single heterosexual men, who comfortably parked themselves between 21 and 24 inches from the comely female stranger. The men who declared themselves in "stable, monogamous" relationships and got a dose of the hormone chose to stand, on average, about 6 1/2 inches farther away.

When researchers conducted the experiment with a placebo, they found no differences in the distance that attached and unattached men maintained from a woman they had just met.

Even when an attractive woman was portrayed only in a photograph, the monogamous men who received oxytocin put a bit more distance between themselves and her likeness. But when the new acquaintance was a man, administration of oxytocin did not prompt attached men to stand farther away than single men, the researchers reported.

The latest findings suggest that oxytocin, which floods the body in response to orgasm, early romance, breast-feeding and childbirth, may act more subtly in humans than has been widely understood.

A mounting body of recent research suggests that boosting oxytocin in the human brain will indiscriminately promote trusting, friendly behavior. Research on female prairie voles has suggested the chemical might play some role in pair-bonding, and in humans playing games of risk and power, it increased empathy and trust in males and females alike. Injected into the cerebrospinal fluid of male rats, oxytocin causes spontaneous erections.

Accordingly, researchers examining oxytocin's effects on people — including the authors of the latest study — assumed that men under its influence would draw closer to women, not farther away.

"This was quite surprising," said Dr. Rene Hurlemann, a psychiatrist at the University of Bonn in Germany, who led the study.

At the same time, the new findings make evolutionary sense, Hurlemann added: As human societies evolved to give men an increasing role in safeguarding and supporting their mates and offspring, it appears that oxytocin may have taken on a more discriminating role in human interaction by favoring staying over straying behavior among men who've already found a mate.

Paul Zak, founding director of Claremont Graduate University's Center for Neuroeconomics Studies, said the new findings squared nicely with research, including his own, suggesting oxytocin doesn't merely make people friendlier — it makes them more empathetic, more attuned to social cues, and more inclined to adjust their behavior accordingly.

But the study also suggests something important about the ways in which the human brain differs from those of other animals, said Zak, who was not involved in the German experiments.

"The finding that one's relationship status affects how oxytocin affects the brain provides some evidence that our brains evolved to form long-term romantic relationships," Zak said. "Hugh Hefner is the exception, not the role model for men."

Inhaled oxytocin was marketed until 1997 in the United States under the name Syntocinon as an aid to new mothers having difficulty with breast-feeding. (It was withdrawn for business reasons unrelated to safety concerns.) In recent years, it has been under investigation as a drug that may help those with autism or schizophrenia to strengthen social skills.

Oxytocin's effects in women are quite clear. It plays a pivotal role in childbirth (its infused synthetic form, called Pitocin, is used to induce labor) and in breast-feeding, where it facilitates the "letdown" of milk.

For men, however, the chemical's effects have been mysterious. High levels of testosterone, for instance, inhibit the release of oxytocin.

Asked whether an oxytocin nasal spray might be used to help philandering males resist temptation, Hurlemann chuckled and asked whether any drug could be so powerful. At the same time, he underscored that high levels of oxytocin — or its more masculine counterpart, the hormone vasopressin — are produced by the body in response to sexual activity, cuddling or even the touch or close physical presence

of a mate.

"What we actually simulate is a kind of post-coital posture" with the nasal administration of oxytocin, Hurlemann said. "And why should you actually approach another women when you're in a post-coital situation? It doesn't make much sense."

For women whose partners seem to get a little too friendly with new female acquaintances at parties, he said, the effects of inhaled oxytocin might be achieved by other means.

"It might make a lot of sense to remind him of the relationship, and sexual activity might be one means of achieving this," Hurlemann said. "I'm not sure it's politically correct to say so, but from a biological point of view, it makes sense."

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