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Trust elixir a potent whiff

By Chicago Tribune

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CHICAGO -- Trust takes time. But if time is short, trust may bloom from a fine mist of hormones sprayed into your nostrils.

That's the remarkable finding of a new study in which people who inhaled a brain compound called oxytocin became more trusting, allowing a partner to invest more simulated money than people who didn't get the hormone.

It could be a surreal fantasy come true for con men or politicians, though for now neuroscientists are the ones most excited about the report by Swiss and American researchers, to be published today in the journal *Nature*.

The chemical roots of trust have long eluded biologists even though the capacity for trust is one of humanity's defining features, allowing cooperation in everything from intimate friendships to vast projects.

The new research suggests all of that may stem in part from the brain's selective secretion of oxytocin, a common hormone best known for its role in childbirth and breastfeeding.

"It's a very important study," said Antonio Damasio, head of neurology at the University of Iowa's College of Medicine, who wrote an accompanying commentary on the *Nature* study.

Although Damasio focused on the meaning for brain science, he conceded he is concerned about the potential for misuse of a chemical that may make people more trusting without their conscious knowledge.

"One has visions of political operatives spraying it at rallies," he said, only half-joking.

A more practical use may be for people with conditions such as autism or social phobias, which involve a breakdown of the normal ability to approach or

bond with other people.

Oxytocin -- not to be confused with the painkiller oxycontin -- seems to work by easing the fear of close contact and betrayal.

Paul Zak, a co-author of the new study, said the hormone probably started out as a sexual aid, helping animals overcome their wariness of each other long enough to reproduce. Now, the same chemical helps mammals take care of their offspring and even allows humans to put their trust in strangers.

"On average, most people do better if they trust others," said Zak, director of the Center for Neuroeconomic Studies at Claremont Graduate University in California.

The hormone also causes contractions during labor, which makes oxytocin -- also known by its trade name, pitocin -- a standby of maternity wards.

Scientists have known for years that oxytocin acts as a kind of social cement in animals. Oxytocin's key role in the whirlwind courtship of the prairie vole -- which have repeated sex for a day or so and then stay together for life -- once prompted Damasio to compare the hormone to the love potion in the opera "Tristan und Isolde."

Zak thought the chemical might be crucial not just for love, but any social exchange that requires trust.

He and his Swiss co-authors at the University of Zurich had 128 college students play a "trust game," in which one person invests simulated money and another is the trustee. First the investor chooses how much money to give the trustee, after which the investment automatically triples. The trustee then decides how much money to give back to the investor, if any. At the end, everyone cashes in the credits for real money.

The Zurich researchers gave some of the investors oxytocin -- three squirts in each nostril, a dose known to increase brain levels of the hormone temporarily. Those students gave the trustees significantly more money on average than students who didn't get oxytocin.

Nearly half of the people in the oxytocin group invested the maximum amount; in the other group only one-fifth gave the maximum investment.

In essence, sniffing oxytocin produced instantly the sort of trust that would normally build through a history of reliable dealings, Zak said. Animal studies suggest that the presence of a known, trustworthy individual naturally stimulates the brain to produce oxytocin.

"When you see your friend walking down the hall towards you, oxytocin is probably released that signals to you that it is OK to approach this person," Zak said.

From a coldly rational standpoint, none of Zak's investors should have entrusted anything to strangers, because the strangers had no incentive to give anything back and no penalty for betrayal. Classic economic models suggest the wisest investment in such a trust game is zero.

Human brains aren't strictly logical. Researchers think oxytocin is just one molecule among many that have hard-wired humans to seek out trust and strive to be trustworthy. Such biological effects on economic decisions have spawned a new research specialty in recent years: neuroeconomics.

Raw biology may help explain even that most basic expression of trust, the handshake. Zak said his group is studying whether shaking hands stimulates the release of oxytocin, capping business deals with a rush of helpful hormones.

If it really works, the potential for misuse of a trust drug like oxytocin is almost limitless. Shady car dealers could pump it into their showrooms; casino owners might spike their martinis with it; pickup artists could wear it as a cologne.

Zak thinks none of those abuses is likely to work.

"Sprinkling this in the air is not going to do anything -- it has to be sprayed into your nostrils," Zak said. "I'm not too concerned about the misuse of it."

Other experts were less sure, including Zak's co-author Ernst Fehr, director of the Institute for Empirical Research in Economics at the University of Zurich. He said the hormone's power to change behavior without an investor's awareness raised serious concerns.

"Our results have implications for the idea of free will," Fehr said in response to an e-mail.

Yet the trust study subjects who got oxytocin weren't feckless dupes. They made about as much profit as people who didn't get the drug, Zak said.

Advertisers may already exploit the natural version of oxytocin all the time, Damasio said. Whenever a politician uses images of family or patriotism to promote trust, the effect is probably a reflexive release of oxytocin inside our brains, similar to an external dose.

If he's right, the real question isn't whether we should fear con men carrying oxytocin. It's whether we should trust ourselves.



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