

Intranasal application of hormone appears to enhance placebo response

October 22 2013

The hormone oxytocin may mediate processes such as empathy, trust, and social learning. These are key elements of the patient-physician relationship, which is an important mediator of placebo responses, according to background information in a Research Letter appearing in the October 23/30 issue of *JAMA*. Simon Kessner, of the University Medical Center Hamburg-Eppendorf, Hamburg, Germany, and colleagues conducted a study to test whether oxytocin enhances the placebo response in an experimental placebo analgesia model.

Between January and September 2012, the researchers randomly assigned 80 healthy male volunteers to 40 IU of intranasal [oxytocin](#) or saline. The researchers and participants were blinded to study drug identity. After 45 minutes, placebo analgesia was assessed using the following standard technique. Two identical inert ointments were applied to 2 sites on each participant's forearm. The ointments were described as an anesthetic that reduces pain (placebo) and an inert control cream (control). In the 15 minutes following application that the participant expected the anesthetic to take effect, the researchers calibrated the intensity at which a 20-second painful heat stimulus was perceived by each individual to rate as a 60 on a scale ranging from 0 (no pain) to 100 (unbearable pain). During the subsequent test phase, a series of 10 of those calibrated stimuli was applied to each of the 2 sites in randomized order. The primary outcome was the placebo analgesic response, defined as the reduction of perceived pain intensity on the placebo site compared with the control site in the oxytocin and saline groups.

Despite identical stimulation on both sites, the difference in pain ratings at the placebo and pain sites were greater in the oxytocin group than in the saline group due to lower [pain](#) ratings at the placebo site.

"To our knowledge, our study provides the first experimental evidence that [placebo](#) responses can be pharmacologically enhanced by the application of intranasal oxytocin," the authors write. "Further studies are needed to replicate our findings in larger clinical populations, identify the underlying mechanisms, and explore moderating variables such as sex or aspects of patient-physician communication."

More information: [DOI: 10.1001/jama.2013.277446](https://doi.org/10.1001/jama.2013.277446)

Provided by The JAMA Network Journals

Citation: Intranasal application of hormone appears to enhance placebo response (2013, October 22) retrieved 3 May 2024 from <https://medicalxpress.com/news/2013-10-intranasal-application-hormone-placebo-response.html>

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