

Oxytocin increases social altruism

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Prof. Dr. Dr. med. René Hurlmann and Nina Marsh from Clinic and Polyclinic for Psychiatry and Psychotherapy, University of Bonn Hospital. Credit: (c) Katharina Wislperger/Ukom UKB

Nowadays, much emphasis is placed on sustainability. The degree to which people are willing to donate their own money for this depends on their level of oxytocin. Scientists at the University of Bonn Hospital have discovered that the willingness to donate increases with the quantity of this bonding hormone. However, oxytocin only has an effect with regard to social sustainability projects. The hormone does not increase the ability to participate in the case of purely environmentally oriented projects. The scientists are now reporting their results in *The Journal of Neuroscience*.

The "cuddle hormone" oxytocin strengthens social ties: In persons newly in love, during sex and during breastfeeding, the level of this hormone is particularly high. "Earlier studies have found evidence that the messenger also promotes generosity," says Prof. Dr. med. René Hurlemann, director of the Department of Medical Psychology at the Clinic and Polyclinic for Psychiatry and Psychotherapy. Does oxytocin also increase the willingness to donate for sustainable projects? A team of researchers at the University of Bonn hospital, under the guidance of the Department of Medical Psychology, got to the bottom of this question.

The scientists conducted experiments on a total of 172 participants. Each subject received ten Euros and was able to decide whether he would keep the amount for himself or whether he wished to donate all or only part of it. There were two actual aid projects to choose from: One ecological project for rain forest reforestation in Congo and a social project to improve the livelihoods of the native inhabitants in the Congo region. Using saliva samples, the researchers tested the participants' oxytocin level during the investigation.

Oxytocin appears to have no effect in the case of environmental projects

"Since projects for environmental sustainability also always have a social dimension, we initially suspected that oxytocin generally increases the willingness to donate to such projects," reports lead author Nina Marsh from the team working with Prof. Hurlemann. Subjects exhibiting higher saliva levels of oxytocin during the experiment, donated far more generously to social projects, as expected, than did those with lower hormone levels. However, what was surprising was the fact that this effect was not seen in the case of environmental projects. Whether there were high or low amounts of the body's own oxytocin did not change anything at all with regard to donation behavior.

In a second experiment, the researchers administered the bonding hormone to some of the [test subjects](#) via a nasal spray; the other test subjects received a placebo as control. "The pattern repeated itself: On average, the oxytocin group donated twice as much for social projects - 4.50 euros more on average - than did the untreated participants," says Marsh. In the case of the environmental project, the willingness to donate even decreased through oxytocin. While the placebo subjects donated an average of 4.42 euros of the ten euros, the subjects receiving oxytocin were stingier, donating only 2.42 euros.

Then the participants were given a catalogue of various foods and items of clothing. They could either select a conventionally produced version or choose the sustainable variant and indicate a price for these items which they would be willing to pay. One catalogue listed socially-conscious products which featured on good working conditions. The other catalogue targeted goods produced in an environmentally friendly way, for which emphasis was placed on maintaining biodiversity. The subjects each saw only one of the two catalogues. The group receiving oxytocin selected more products produced in a socially sustainable way than did the placebo participants. They were even willing to pay twice as much money than for conventional products. In the group with the environmentally oriented catalogue, practically no oxytocin influence

could be observed.

The hormone shifts test subjects' priorities

"The results show that subjects with low oxytocin levels tend to support environmental sustainability projects, since they donated an average of nearly half of their money for this purpose," says Nina Marsh. "But under the influence of oxytocin, there is a shift in priorities which favors social altruism." Prof. Hurlemanns summarizes: "If support is needed for environmental projects, the social message of the project should be emphasized to also reach those persons who have elevated [oxytocin](#) levels."

More information: N. Marsh et al. The Neuropeptide Oxytocin Induces a Social Altruism Bias, *Journal of Neuroscience* (2015). [DOI: 10.1523/JNEUROSCI.3199-15.2015](https://doi.org/10.1523/JNEUROSCI.3199-15.2015)

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