

Hormone spray improves male sensitivity

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Many women have no doubt been waiting a long time for this: the neuropeptide oxytocin enhances male empathy. This substance also increases sensitivity to so-called "social multipliers", such as approving or disapproving looks. This is revealed in a study conducted by scientists at Bonn University and the Cambridge Babraham Institute, which has now appeared in the *Journal of Neuroscience*.

48 healthy males participated in the experiment. Half received an [oxytocin](#) nose spray at the start of the experiment, the other half a placebo. The researchers then showed their test subjects photos of emotionally charged situations in the form of a crying child, a girl hugging her cat, and a grieving man. The test subjects were then invited to express the depth of feeling they experienced for the persons shown.

In summary, Dr. René Hurlemann of Bonn University's Clinic for Psychiatry was able to state that "significantly higher emotional empathy levels were recorded for the oxytocin group than for the placebo group", despite the fact that the participants in the placebo group were perfectly able to provide rational interpretations of the facial expressions displayed. The administration of oxytocin simply had the effect of enhancing the ability to experience fellow-feeling. The males under test achieved levels which would normally only be expected in women. Under normal circumstances, the "weak" sex enjoys a clear advantage when it comes to the subject of "empathy".

Nasal Spray Improves Learning

In a second experiment, the participants had to use their computers to complete a simple observation test. Correct answers produced an approving face on the screen, wrong ones a disapproving one.

Alternatively, the feedback appeared as green (correct) or red (false) circles. "In general, learning was better when the feedback was shown in the form of faces", states Dr. Keith Kendrick of the Cambridge Babraham Institute in England. "But, once again, the oxytocin group responded clearly better to the feedback in the form of facial expression than did the [placebo](#) group".

In this connection, the so-called amygdaloid nucleus appears to play an important role. This cerebral structure, known generally to doctors as the amygdala, is involved in the emotional evaluation of situations. Certain people suffer from an extremely rare hereditary disease which progressively affects the amygdala. "We were lucky to be able to include two female patients in our study group who were suffering this defect of the amygdala", says Hurlemann. "Both women reacted markedly worse to approving or disapproving faces in the observation test than did other women in a control group. Moreover, their emotional empathy was also affected". Hence, the researchers suspect that the amygdala could bear some form of co-responsibility for the effect of the oxytocin.

One of the effects of the hormone oxytocin is that it triggers labour pains. It also strengthens the emotional bond between a mother and her new-born child. Oxytocin is released on a large scale during an orgasm, too. This neuropeptide is also associated with feelings such as love and trust. Our study has revealed for the first time that emotional empathy is modulated by oxytocin, and that this applies similarly to learning processes with social multipliers, says Hurlemann. This hormone might thus be useful as medication for diseases such as schizophrenia, which are frequently associated with reduced social approachability and social withdrawal.

Provided by University of Bonn

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