



## Oxytocin in the recognition of emotions



### The "social" neuropeptide plays a role in facial mimicry

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Studies have demonstrated that oxytocin (which acts as an hormone and also as a neurotransmitter in the brain) plays a role in facilitating the perception of emotions in other people's facial expressions. An international study conducted by Sebastian Korb (researcher in the SISSA's Neurosciences area) and colleagues has tested the idea that this phenomenon is related to facial mimicry. According to embodied cognition theory, in fact, the recognition of others' emotions is facilitated by their imitation and reproduction with our own face. The study confirms this facilitating effect, which proves to be more pronounced for expressions conveying negative emotions (anger, distress), especially when seen on the face of a child.

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Oxytocin, whether functioning as a hormone or a neurotransmitter, is involved in a series of important physiological and psychological functions. For example, it promotes maternal attachment, lactation, pair bonding and group cohesion. However, the picture is actually far more complex, just think that it can sometimes even lead to aggressive behaviour.

Experimental results also show that intranasal administration (with a spray) of oxytocin makes people more willing to take care of others and better at recognizing emotions.

It was this latter effect that attracted the attention of Sebastian Korb, researcher at the International School for Advanced Studies (SISSA) in Trieste and expert on facial mimicry: "what is the mechanism at the basis of the emotion recognition facilitation observed after the administration of intranasal oxytocin?" Korb asked himself. According to embodied cognition theory, the ability to imitate an emotional expression seen on the face of others facilitates the recognition of the emotion. "Could oxytocin be stimulating the imitation?". To test the existence of a relationship between oxytocin and facial mimicry, Korb and colleagues selected a sample of 60 adult males and gave, in form of a spray, half the sample a dose of oxytocin and the other half a dose of placebo (the design was double blind, meaning that neither the experimenter nor the subject were aware of which product was administered). After a sufficient time interval for the drug to take effect, the subjects underwent a series of tests assessing the evaluation and recognition of emotional expressions shown in a series of short videos depicting adult or infant faces. As they performed the tests, the response of their facial muscles was also recorded to measure facial mimicry.

The results showed that facial mimicry was more pronounced in the subject who received the oxytocin dose (compared to those who received the placebo), and that this increase in mimicry was greater when subjects observed newborns crying (anger and sadness are not easily distinguishable in very young infants).

"The finding is interesting not only because it shows that oxytocin has a modulating effect on facial mimicry, but also because there is a strong response to infant faces even in males, whereas effects of oxytocin on caregiving had typically been shown in women". The study, published in *Hormones and Behavior* was conducted with the participation of the University of Geneva in Switzerland and the University of Wisconsin in the United States.

#### **USEFUL LINKS:**

- **Articolo originale su *Hormones and Behaviour*: <http://goo.gl/xsoNpk>**



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