

Birth control pills affect the love hormone

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Birth control pills are an effective and safe form of birth control; however, they are associated with a number of side effects, including mood alterations. A recent research study from Aarhus University has shown that women who take birth control pills have a much higher level of the hormone oxytocin, also called the love hormone, in their blood compared to non-users. This study, published in *Scientific Reports*, helps to understand why birth control pills affect emotional life.

"Oxytocin is a hormone found naturally in the body and is secreted during [social cues](#) and bonding, reinforcing [social behaviour](#)," says Associate Professor Michael Winterdahl of the Department of Clinical Medicine, Aarhus University, who is behind the study.

Can one really get too much of the love hormone?

"A constantly elevated level of oxytocin may mean that it is not secreted in the same dynamic way as under normal conditions. It is precisely these dynamics that are important to our emotional lives. This may explain why feelings such as closeness, attachment and love appear to be altered in some [women](#) who use [birth control pills](#)," he explains.

Negative effects on romantic love

The researchers collected and analyzed blood samples from 185 [young women](#) in the United States. Participants also answered a variety of questions about their mental well-being.

"Many women have used [birth](#) control pills at some point in their lives. Our study presents, for the first time, evidence for changes in the levels of oxytocin in response to birth control, providing a mechanism by which some women experience altered mood. Since oxytocin is important for attachment to a partner, one can imagine that the constantly elevated level is important—not only for the woman herself, but also in the broader sense of the relationship," says the researcher.

According to Michael Winterdahl, the study suggests there may be changes in the behaviour of women who would not otherwise experience more traditional side effects.

"Humans are super social beings, we are able to put ourselves in the place of others, show empathy, fear loneliness and seek community—all driven by the brain's secretion of oxytocin. Even very small changes in brain oxytocin levels will affect the way we process emotions and thus how we interact with each other. Our study can help explain why some women on birth control pills experience a diminished sense of closeness, for example."

He emphasizes that, with the new knowledge, they can now begin to examine the risk profile for different types of birth control pills, and in the longer term, one may be able to predict who is at risk of mood alterations.

More information: Benjamin Garforth et al. Elevated plasma oxytocin levels and higher satisfaction with life in young oral contraceptive users, *Scientific Reports* (2020). DOI: [10.1038/s41598-020-64528-w](https://doi.org/10.1038/s41598-020-64528-w)

Provided by Aarhus University

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