

# What explains the increased likelihood of suicide in some contraceptive pill users?

The use of oral contraception containing a synthetic form of progesterone (progestogen) may lead to an increased risk of suicidal behaviour. Researchers at the Netherlands Institute for Neuroscience have now discovered the mechanism underlying this process.

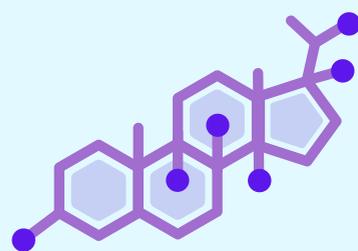


700.000

Around 700,000 people die worldwide by suicide on an annual basis. Yet it remains a taboo and a poorly understood health problem. Under the supervision of Dick Swaab, Lin Zhang has dedicated her research to unravelling the mechanisms behind suicide. Its connection to progesterone became her latest research target.

## Progesterone

Progesterone plays a role in women's reproductive systems but can also act as a stress hormone. The latter is often neglected. "All stress-related substances may contribute to suicide risk", Swaab explains. "Because of its link to stress, depression, and suicide, we wanted to learn more about how progesterone impacts the brain".



Zhang showed in brain tissue that the lower part of the hypothalamus, known as the infundibular nucleus, is most sensitive to progesterone. She found striking differences: those who had depression and died from suicide had an elevated number of the neurons that expressed opiate-like substances. Interestingly, a high proportion of these neurons also expressed progesterone receptors.

**Progesterone likely increases the activation of the opioid system, eventually leading to heightened suicidal risk.**

## What does this mean?

Progestogen-containing drugs are frequently prescribed as contraception or for the treatment of menopause. Clinical research shows that, while the risk for suicide is negligible in drugs containing natural progesterone, this may not be the case for its synthetic form, as it is more potent.



Gynaecologists have incorporated this knowledge into their standard practice by screening patients for depression and suicidal risk before prescribing one or the other. This is not yet the case for general practitioners. "We hope this finding will cause doctors to explicitly ask for signs of depression or suicidal ideations and, if necessary, suggest an alternative option."

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