

# Danish study links contraceptive use to risk of depression

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Aside from pesky side effects like nausea and headaches, hormonal contraceptives are generally considered quite safe and effective. But researchers Wednesday identified a heightened risk of an unintended

consequence: depression.

A study published in *JAMA Psychiatry* found [women](#) using hormonal contraception faced a higher rate of developing [depression](#) and using antidepressants than women who did not use the drugs. Oral contraceptives that combine two key hormones, a type widely used by Americans, increased women's rate of taking antidepressants by 23 percent. Among teens using these contraceptives, the rate nearly doubled.

Links between [hormonal contraceptives](#) and depression have been raised in the past, but this Danish study is among the largest to date. More than 1 million women were tracked over a 10-year period through a national database. The participants, all between ages 15 and 34 years old, did not suffer from major [mental health](#) disorders.

The researchers collected data regarding women's use of several types of contraceptives, as well as when they first used their antidepressants or received a depression diagnosis. The oral options studied were progestin-only contraception, which consists of a compound that mimics the hormone progesterone; and the combination contraceptives, which work by combining progestin with estrogen. Both prevent pregnancy by stopping ovulation, or egg production, thickening the lining of the cervix to make it harder for sperm to get into the uterus and thinning the lining of the uterus to help stop eggs from implanting there.

While [birth control](#) benefits women in many ways, Dr. Ojvind Lidegaard, clinical professor in obstetrics and gynecology at the University of Copenhagen and co-author of the study, said patients and physicians should be informed of the side effects shown in this research.

"We have to realize among all the benefits, external hormones (also)

may have side effects. And the risk of depression is one of them," Lidegaard said. "And we have to manage our clients, younger and older, about what kind of contraception they can have the most benefit from."

But Dr. Cora Breuner, a Seattle pediatrician and chair of the committee on adolescents for the American Academy of Pediatrics, cautioned against overreacting to the study. She noted that most women use hormonal contraception with no mental health effects and said she sees patients who seek contraceptives to help regulate their moods. Regular access to contraceptives enables women to regulate their menstrual cycles with precision, she said. And although the drug presents certain risks, the benefits of birth control trump the risks of the alternative.

"An unintended and unwanted pregnancy far outweighs all the other side effects that could occur from a contraceptive," she said.

In Denmark, more than 40 percent of women in their reproductive prime use some form of hormonal contraception, Lidegaard said. Sixteen percent of American women age 15 to 44 take an oral contraceptive, another 7 percent use a long-acting contraceptive and more than 4 percent get a shot from a doctor or use a vaginal ring or a patch, according to the federal Centers for Disease Control and Prevention.

According to the study, among 15 to 19 year-old females, those taking oral combination birth control pills were diagnosed with depression at a 70 percent higher rate than non-users. The patch and vaginal rings posed a particular risk to young women, tripling the rate of depression.

Progestin-only birth control created even higher rates of depression and anti-depressant use. Oral forms of the drug doubled the use of antidepressants among young women. Intrauterine devices, or IUDs, like Mirena, nearly tripled the number of depression diagnoses and anti-

depressant use among the study's younger participants.

Lidegaard said the strong effects of birth control among the young cohort could be connected to unstable hormone levels caused by puberty.

"Women in that age group have already experienced dramatic hormone changes due to their adolescence," Lidegaard said. "When such dramatic changes occur, women are more sensitive, not just to hormonal changes, but to other experiences in their lives."

This study is the latest addition to growing body of literature suggesting women's contraceptive use may have an association with mood disorders. One small 2012 study connected oral combination contraceptives with changes in emotional brain reactivity among women who had previously experienced adverse side effects to the drug. Another article, published in 2003, found changes in estrogen levels could cause bouts of depression among at-risk women. And two separate studies found adverse mood swings among women taking progesterone as part of hormone therapy.

The newest findings also revealed the rate of depression dropped dramatically as the women continued using their contraceptives. The rate of developing depression actually fell below that of non-users after four to seven years of taking birth control. Women who begin birth control at an older age also experienced reduced rates of depression.

Dr. Kristopher Kaliebe, associate professor of psychiatry at the University of South Florida and member of the Academy of Childhood and Adolescent Psychiatry, said he notices psychological changes among some of his female patients after they start taking birth control. Because the physicians prescribing these drugs may not be aware of these types of side effects and may not be skilled in mental health issues, they might

not be meeting the needs of their patients, he said.

"I don't think we really know all the implications of the way that it affects behavior," Kaliebe said. He was not involved with the study.

Like Kaliebe, Lidegaard said his findings signal a need for health providers to be more aware of possible connections between different systems in the body, like depression and the use of [contraceptives](#). Doctors should inform women considering birth control of depression as a possible side effect of the drug, he said. The information allows women to make decisions about their contraceptive options that are based on their holistic health, not just one symptom.

"Hormone contraception should be considered in context to all the benefits and all the risks," he said. "And this is just one of them."

**More information:** Charlotte Wessel Skovlund et al. Association of Hormonal Contraception With Depression, *JAMA Psychiatry* (2016). [DOI: 10.1001/jamapsychiatry.2016.2387](https://doi.org/10.1001/jamapsychiatry.2016.2387)

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