

Blood clotting risk quickly drops after stopping hormonal contraceptives, finds study

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Using birth control pills and other hormone-based contraceptives is known to elevate the risk of blood clots about three-fold, but a new study suggests that this risk largely goes away within two to four weeks after one stops using these contraceptives, according to research published in

Blood.

The findings—the first to provide such confirmatory guidance on the best timing to stop contraception—can help patients and doctors weigh the benefits and risks of [hormonal contraceptives](#) and guide when to stop using them ahead of events that could further increase the risk of dangerous clots, such as major surgery, prolonged periods of immobility, or when tapering anticoagulant medications after a blood clot (deep vein thrombosis or pulmonary embolism).

Based on the findings, researchers say stopping contraceptives two to four weeks ahead of time should be sufficient in most cases.

Combined hormonal contraceptives have long been known to increase the risk of blood clots, affecting roughly 10 in 10,000 individuals on estrogen-containing [birth control](#), according to the Centers for Disease Control and Prevention. What has been less clear is how long this effect lingers once a person stops using contraceptives.

Several medical guidelines recommend stopping hormonal contraceptives ahead of certain medical events, such as [major surgery](#), but most do not specify how long someone should be off birth control beforehand.

"Our goal was not to look at the thrombotic risk of contraceptives, but to determine how long that risk takes to normalize after stopping contraceptives," Marc Blondon, MD, an expert in vascular medicine at the University Hospitals of Geneva, Switzerland, and the study's corresponding author. "It's reassuring to know that that possible harm of the pill goes away rapidly when one stops taking it."

The study focused on birth control methods known as combined hormonal contraceptives, which include [birth control pills](#), vaginal rings,

and transcutaneous patches. These methods prevent pregnancy by releasing estrogen and progestin to stop ovulation and are the most common contraceptives in Europe and North America.

For the study, researchers collected [blood samples](#) from 66 women on hormone-based birth control at six timepoints before and after the women stopped using their contraceptives. Participants voluntarily stopped using hormonal contraceptives for personal reasons. Dr. Blondon and team then compared the samples with blood from a control group of 28 women who were not using hormone-based birth control.

The researchers measured several biomarkers that are associated with combined hormonal contraceptives and clotting activity. These include global markers of coagulation activation due to hormones and individual coagulation factors (factor VIII and factors that inhibit clotting).

As expected, participants showed elevated levels of clotting markers before they stopped using their contraceptives. However, these coagulation markers dropped precipitously within one to two weeks after they stopped taking birth control, and by week 12, all markers were similar to the [control group](#).

Overall, around 80% of the total drop in clotting markers seen in these women occurred within two weeks of stopping their birth control and 85% of the drop occurred within four weeks. This suggests that the likelihood of developing clots due to birth control returns to nearly normal levels within the first few weeks of stopping birth control.

"These findings can help to inform discussions around whether combined hormonal contraceptives are right for the patient, as well as patient-surgeon discussion of whether the benefit of stopping for a short time actually exceeds the risks," said Dr. Blondon. "It's very important to talk about the benefits of contraception because it's crucial to avoid

unwanted pregnancy and for women to have the choice of a planned pregnancy."

He adds that in addition to reducing the risks of unwanted or unplanned pregnancies, combined hormonal contraceptives have been found to ease pelvic pain disorders, decrease the risk of anemia, and lower the risk of developing endometrial and ovarian cancers. Stopping hormonal contraceptives early when a VTE occurs may also lead to abnormal uterine bleeding, a risk that Dr. Blondon explains leads many doctors to advise patients to continue using hormonal [birth](#) control for a period while they are taking anticoagulants to treat the VTE.

Researchers noted that the study was conducted in Switzerland and that most participants were young, Caucasian, and of healthy weight. Subgroup analyses did not show any indication that the results would be different in [older women](#), different racial groups, or people who are overweight, though a larger study would be needed to increase confidence in the generalizability of the results across groups.

In addition, Dr. Blondon explained that the study used biomarkers as a proxy for clotting risk; additional studies are needed to confirm whether this translates to a reduction in the risk of actual clotting events.

More information: *Blood* (2023).
[dx.doi.org/10.1182/blood.2023021717](https://doi.org/10.1182/blood.2023021717)

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