

# Vitamin D levels may drop when women stop using birth control

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Women risk having their vitamin D levels fall when they stop using birth control pills or other contraceptives containing estrogen, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

Vitamin D is a hormone involved in the immune system and managing calcium levels in the blood. Proper calcium levels are necessary for bone health.

The body produces vitamin D in a chemical reaction when the skin is exposed to sunlight. A smaller portion of the body's vitamin D supply—about 10 percent—comes from food, including fatty fish and milk fortified with the vitamin. Chemical changes to vitamin D are needed to produce the active form.

During pregnancy, women produce increased amounts of the active form of vitamin D to support formation of the fetal skeleton. As a result, pregnant women face an increased risk of developing vitamin D deficiency, according to the Endocrine Society's [Clinical Practice Guideline on vitamin D deficiency](#).

"Our study found that women who were using contraception containing estrogen tended to have higher vitamin D levels than other women," said the study's first author, Quaker E. Harmon, MD, PhD, of the National Institutes of Health's (NIH's) National Institute of Environmental Health Sciences in Research Triangle Park, N.C. "We could not find any behavioral differences such as increased time spent outdoors to explain the increase. Our findings suggest that [contraceptives](#) containing estrogen tend to boost vitamin D levels, and those levels are likely to fall when women cease using contraception."

For the cross-sectional data analysis, researchers analyzed data from the Study of Environment, Lifestyle & Fibroids (SELF), a study of reproductive

health in nearly 1,700 African-American women between the ages of 23 and 34. The women all lived in Detroit, MI, or the surrounding area. As part of the study, the participants answered questions about contraceptive use, as well as the amount of time they spent outdoors and any vitamin D supplements they took.

The 1,662 women provided blood samples, which were analyzed to measure levels of 25-hydroxy vitamin D, the primary circulating form of vitamin D.

After adjusting for seasonal exposure to sunlight, the researchers found the use of contraceptive pills, patch or ring containing [estrogen](#) was associated with a 20 percent higher 25-hydroxy vitamin D level. While current birth control users tended to have higher levels of vitamin D in the blood, past contraceptive users had average levels of Vitamin D.

"Our findings indicate women may run the risk of developing vitamin D deficiency just when they want to become pregnant," Harmon said. "For [women](#) who are planning to stop using [birth control](#), it is worth taking steps to ensure that vitamin D levels are adequate while trying to conceive and during pregnancy."

**More information:** "Use of Estrogen-containing Contraception is Associated with Increased Concentrations of 25-hydroxy Vitamin D," <http://press.endocrine.org/doi/10.1210/jc.2016-1658>, [DOI: 10.1210/jc.2016-1658](https://doi.org/10.1210/jc.2016-1658)

Provided by The Endocrine Society

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