

# Vitamin D deficiency may reduce pregnancy rate in women undergoing IVF

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Women with a vitamin D deficiency were nearly half as likely to conceive through in vitro fertilization (IVF) as women who had sufficient levels of the vitamin, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism (JCEM)*.

Long known for its role in bone health, vitamin D is a steroid hormone that is emerging as a factor in fertility. Animal studies have shown that the hormone, which is produced in the skin as a result of sun exposure as well as absorbed from some fortified foods, affects fertility in many mammals.

To examine vitamin D in human fertility, Italian researchers studied [women](#) undergoing IVF, a type of assisted reproductive technology. More than 1 percent of all infants born in the United States each year are conceived using assisted reproductive technology, according to the U.S. Centers for Disease Control and Prevention.

"Our work is the largest study to date to examine how vitamin D affects fertility in women who are undergoing IVF," said one of the study's authors, Alessio Paffoni, MSc, of the Ospedale Maggiore Policlinico in Milan, Italy. "We found that women who had sufficient levels of vitamin D were more likely to produce high-quality embryos and more likely to become pregnant than women who were deficient in vitamin D."

The prospective cross-sectional study analyzed vitamin D levels in

women who were referred to the Infertility Unit of the Fondazione Ca' Granda at Ospedale Maggiore Policlinico for IVF during 2012. The researchers examined the success of IVF procedures in 154 women who were vitamin D deficient and 181 women who had sufficient levels of vitamin D in their blood. Women who had vitamin D levels of at least 20 ng/ml in their blood were considered to have sufficient levels of the hormone. Levels of 30 ng/ml are recommended for general health.

Women who had sufficient levels of vitamin D were nearly twice as likely to conceive as their counterparts with vitamin D deficiency. Since women with sufficient levels of the hormone were more likely to produce top-quality embryos, researchers theorized vitamin D was involved in the production of quality eggs in the ovaries as well as the successful implantation of embryos in the uterus.

"Although randomized clinical trials are needed to confirm the findings, our results certainly suggest that low levels of vitamin D contribute to infertility," Paffoni said. "Since vitamin D supplementation is an inexpensive and simple intervention with few relevant side effects, additional study in this area has the potential to markedly influence the way infertility is treated."

**More information:** The study, "Vitamin D Deficiency and Infertility: Insights from In Vitro Fertilization Cycles," was published online, ahead of print.

Provided by The Endocrine Society

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