

# Low vitamin D levels linked to risk of preterm birth in study

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Women with lowest levels of the 'sunshine vitamin' most likely to deliver early, researchers found.

(HealthDay)—Women who have low blood levels of vitamin D during pregnancy are more likely to give birth prematurely, a new study suggests.

Women with the lowest levels of [vitamin](#) D were about 1.5 times as likely to deliver early compared to those with the highest levels, the investigators found. That finding held true even after the researchers accounted for other factors linked to preterm birth, such as overweight and obesity, and smoking.

"Mothers who were deficient in vitamin D in early parts of [pregnancy](#) were more likely to deliver early, preterm, than [women](#) who did not have vitamin D deficiency," said Lisa Bodnar, associate professor of epidemiology and [obstetrics](#) and gynecology at the University of

Pittsburgh, who led the study.

Although this study found a strong association between vitamin D levels and preterm birth, Bodnar noted that the study wasn't designed to prove that low vitamin D levels actually caused the early deliveries. "We can absolutely not prove cause and effect," she said.

The study is published in the February issue of *Obstetrics & Gynecology*. The U.S. Centers for Disease Control and Prevention provided funding for this research.

According to the Institute of Medicine's Food and Nutrition Board, pregnant women should get 600 international units (IUs) of vitamin D daily. The body naturally produces vitamin D after exposure to sunlight. Few foods contain the vitamin. However, fatty fish, such as salmon or sardines, is a good source. And, vitamin D is added to dairy products in the United States.

Vitamin D helps to maintain healthy bones. It also helps muscles and nerves work properly, according to the U.S. National Institutes of Health (NIH).

Premature birth can lead to lifelong problems for a baby, and this risk is greater the earlier a baby is delivered. A baby is considered premature when born before 37 weeks of pregnancy, according to the March of Dimes. Early birth can cause a number of problems, including issues in the lungs, brain, eyes, ears, and the digestive and immune systems, according to the March of Dimes.

Previous studies on vitamin D levels and their effects on early delivery have been mixed, Bodnar explained. "One or two large studies showed vitamin D deficiency increased the risk," she said. However, smaller studies found no link.

Vitamin D levels vary depending on the season, with low levels more likely in winter. Levels also vary depending on where a person lives, Bodnar said. Black women are more likely to be deficient in vitamin D than other groups, she added.

For the new study, researchers looked at just over 2,100 women who didn't give birth early, and more than 1,100 who delivered preterm. All of the women included in the research had given birth to single infants between 1999 and 2010.

The researchers found that as the women's blood levels of vitamin D decreased, the chance of preterm birth increased.

There is no universally agreed upon definition of deficient vitamin D levels, according to Bodnar. In general, according to the NIH, levels below 30 nmol/L (nanomoles per liter) are too low for good health, while levels of 50 nmol/L are probably sufficient for most people.

In the study, Bodnar and her colleagues grouped women as less than 50 nmol/L, 50 to 74.9 nmol/L, and 75 nmol/L or above. Before adjusting for other preterm birth risks, the researchers found that more than 11 percent of the mothers in the lowest vitamin D level group delivered before 37 weeks. About 9 percent of mothers in the middle group delivered early and 7 percent of those in the highest level group did, the findings showed.

When the researchers adjusted the data to account for other preterm birth risk factors, they saw a similar association between lower vitamin D levels and preterm birth, according to the study.

So, how might vitamin D offer some protection against preterm birth? Possibly by helping to reduce bacterial infection in the placenta, which can trigger an early delivery, according to Bodnar.

But, she cautioned, "women should not run out and start taking vitamin D supplements. They should take a prenatal vitamin [which includes D] as recommended by their doctor."

The study shows what experts call a "dose dependent" link between vitamin D and early delivery, with lower levels linked to a greater [preterm birth](#) risk, said Dr. Jennifer Wu, an obstetrician-gynecologist at Lenox Hill Hospital in New York City.

But, Wu said, more data is needed. Among the many questions that need to be answered if future studies reach the same conclusion is, which vitamin D supplements might be best?

**More information:** To learn more about vitamin D, visit the [U.S. National Institutes of Health](#).

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