

Two recent studies reach same conclusion: PMS is tied to deficiencies of vitamin D (cholecalciferol) and Calcium.

Calcium, Vitamin D in Diet May Prevent PMS

Possible Cut in Risk of Premenstrual Syndrome Marks Another Good Reason to Eat Right

The findings appear in the June 13, 2005 issue of *Archives of Internal Medicine*.

Reviewed By [Michael Smith, MD](#)
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June 13, 2005 -- **Now there's yet another reason for women to get plenty of calcium and vitamin D. The bone-building nutrients may prevent PMS.**

PMS -- premenstrual syndrome [PMS -- premenstrual syndrome](#) -- is a collection of symptoms that come between ovulation and a woman's menstrual period. Symptoms include depression, irritability, fatigue, abdominal cramps, breast tenderness, and headaches. To qualify as PMS, the symptoms must be severe enough to interfere with normal life activities.

There are various ways to treat PMS, but no way to prevent it. Now a strong clue comes from University of Massachusetts researcher Elizabeth R. Bertone-Johnson, ScD, and her Harvard University colleagues. The researchers analyzed data collected over 10 years from nurses 27-44 years old participating in a long-term health study -- including more than 1,000 women with PMS.

"We found women with high intakes of both calcium and vitamin D did have significantly reduced PMS risk," Bertone-Johnson tells WebMD. "Those who ate about four servings a day of low-fat dairy or yogurt or fortified orange juice had a 40% lower risk of PMS than those who did not. That is about 1,200 milligrams of calcium or 400 international units (IU) of vitamin D each day."

Women Not Getting Enough Calcium, Vitamin D

The recommended daily dose of vitamin D is 400 IU. Recommendations for calcium for adult women vary by age:

- Women 19 to 50 years old need 1,000 milligrams of calcium daily.
- Women 51 and over need 1,200 milligrams of calcium daily.

Women badly need this much calcium and vitamin D, says gynecologist Stephen Bashuk, MD, of Emory University.

"Women in the 18-30 age group at risk for PMS are in the prime of their bone mineralization years," Bashuk tells WebMD. "Every woman of childbearing age should be on calcium for her bones. Every woman needs to be doing this to build up bones so she has less chance of dangerous fractures in her later years."

The women in Bertone-Johnson's study were all nurses. Yet only one in five was getting close to the recommended amount of calcium and vitamin D in her diet. Few were taking calcium supplements, so the study does not specifically address the issue of whether calcium and vitamin D supplements are needed. Yet Bashuk says the study gives women yet another reason to make sure they get enough calcium.

"What this study says is that if you take an 18-year-old woman without PMS -- who has a 20% lifetime chance of getting it -- if she takes her calcium she has less chance of getting PMS," Bashuk says.

"Whether to take calcium is a no-brainer. And if you get a side benefit that it may prevent PMS, that would be a wonderful thing. I certainly would recommend if a woman has

PMS, and doesn't take calcium or doesn't have a good dairy intake, it is not an unreasonable thing for her to go on calcium supplements and see if it helps."

Bertone-Johnson and Bashuk both note that a study of this kind does not prove that calcium or vitamin D really prevents PMS. Only a clinical trial can do that. In the meantime, women may wish to consult their doctors about whether -- and how -- to get more calcium and vitamin D.

"I think it is something women can talk about with their doctors, whether they are thinking about increasing calcium and vitamin D to prevent PMS or to strengthen their bones," Bertone-Johnson says. "It is premature to suggest this is going to be the magic bullet to prevent PMS. But it is something women, after talking with their doctors, may want to incorporate into their diets."

SOURCES: Bertone-Johnson, E. *Archives of Internal Medicine*, June 13, 2005; vol 165: pp 1246-1252. Elizabeth R. Bertone-Johnson, ScD, assistant professor of epidemiology, University of Massachusetts, Amherst. Stephen Bashuk, MD, assistant professor of obstetrics and gynecology, Emory University, Atlanta.

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Micronutrients and the premenstrual syndrome: the case for calcium.

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Premenstrual syndrome afflicts millions of premenopausal women and has been described as one of the most common disorders in women. Research over the past few years suggests that a variety of nutrients may have an important role in the phase related mood and behavioral disturbances of the premenstrual syndrome. There is scientific evidence, at least for a few of these micronutrients, specifically calcium and vitamin D, supporting cyclic fluctuations during the menstrual cycle that may help explain some features of PMS. Ovarian hormones influence calcium, magnesium and vitamin D metabolism. Estrogen regulates calcium metabolism, intestinal calcium absorption and parathyroid gene expression and secretion, triggering fluctuations across the menstrual cycle. Alterations in calcium homeostasis (hypocalcemia and hypercalcemia) have long been associated with many affective disturbances. PMS shares many features of depression, anxiety and the dysphoric states. **The similarity between the symptoms of PMS and hypocalcemia is remarkable. Clinical trials in women with PMS have found that calcium supplementation effectively alleviates the majority of mood and somatic symptoms.** Evidence to date indicates that women with luteal phase symptomatology have an underlying calcium dysregulation with a secondary hyperparathyroidism and vitamin D deficiency. **This strongly suggests that PMS represents the clinical manifestation of a calcium deficiency state that is unmasked following the rise of ovarian steroid hormone concentrations during the menstrual cycle.**