

Vitamin D Reduces Menstrual Pain and Medication Use

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STORY AT-A-GLANCE

- › Optimizing your vitamin D levels may relieve painful menstruation, or dysmenorrhea, according to research published in the journal *Nutrients*
- › Vitamin D reduces both inflammation and prostaglandin levels – elevated prostaglandin levels may lead to more intense contractions of uterine muscles, a key contributor to menstrual pain
- › A comprehensive review of 11 studies revealed a significant reduction in pain intensity among women with dysmenorrhea receiving vitamin D compared to controls
- › A subgroup analysis also revealed that vitamin D supplementation reduced pain intensity in those with vitamin D deficiency
- › Progesterone is another key treatment for menstrual pain

Optimizing your vitamin D levels may be a simple way to relieve painful menstruation, or dysmenorrhea, according to research published in the journal *Nutrients*.¹ Vitamin D shows promise as it reduces both inflammation and prostaglandin levels² – elevated prostaglandin levels may lead to more intense contractions of uterine muscles, a key contributor to menstrual pain.

While addressing other factors, like progesterone, is also important for menstrual pain relief, knowing your vitamin D level, and increasing it if necessary, is a straightforward intervention to be aware of.

Vitamin D Supplementation Relieved Painful Menstrual Cramps

To explore whether vitamin D can decrease pain in women with dysmenorrhea, researchers conducted a comprehensive review of existing studies, including randomized controlled trials up to December 30, 2023.

The studies focused on the effects of vitamin D supplementation on pain intensity and the need for additional pain relief. Overall, 11 studies involving 687 participants were analyzed. The results revealed a significant reduction in pain intensity among those receiving vitamin D compared to controls.

Further analysis showed that vitamin D supplementation effectively reduced pain associated with primary dysmenorrhea but had no significant effect on secondary dysmenorrhea. Primary dysmenorrhea is a common form of menstrual pain that's directly related to the menstrual cycle.

Secondary dysmenorrhea refers to menstrual pain caused by an underlying reproductive system disorder, such as endometriosis, fibroids, adenomyosis, pelvic inflammatory disease or cervical stenosis. Separate research found, however, that vitamin D supplementation was useful for reducing endometriosis-related dysmenorrhea as well.³

"In the pooled analyses," the researchers wrote, "we found that vitamin D supplementation significantly decreased the pain intensity of dysmenorrhea, and the cumulative power supports a 'true' treatment response."⁴

A subgroup analysis also revealed that vitamin D supplementation reduced pain intensity in those with vitamin D deficiency. As for how vitamin D works to relieve painful menstruation, the researchers explained that vitamin D receptors are present in various reproductive organs, including the ovaries, uterus, placenta and pituitary gland, suggesting that vitamin D plays a significant role in reproductive health.⁵

Research indicates that vitamin D interacts with these receptors to suppress the expression of markers induced by inflammation and factors associated with uterine

contraction in the smooth muscle cells of the uterus. Interestingly, a reduction in vitamin D levels has been noted during the luteal phase of the menstrual cycle.⁶

This decrease may lead to an increase in inflammatory cytokines and prostaglandins, thereby intensifying the pain associated with dysmenorrhea. "Overall, through these mechanisms, vitamin D supplementation offers positive benefits in alleviating the pain severity of dysmenorrhea," the scientists explained.⁷

Vitamin D Relieves Menstrual Pain in Adolescents

It's estimated that 45% to 95% of women⁸ – and 80% of adolescents⁹ – suffer from dysmenorrhea. Painful menstrual cramps, which can occur in the lower abdomen or back during menstruation, are among the most common gynecological complaints among women and can significantly affect quality of life, including disrupting sleep and mood.

It's also a common reason for missing school and work and brings with it a steep economic burden, costing \$200 billion annually in the U.S.¹⁰ Nonsteroidal anti-inflammatory drugs (NSAIDs), which inhibit prostaglandin synthesis, are often prescribed to treat menstrual pain, but they increase the risk of gastric ulcers and gastrointestinal bleeding.

Oral contraceptives may also be prescribed for treatment, despite little evidence that they're effective for dysmenorrhea. Further, 50% of women stop using oral contraceptives for menstrual pain due to side effects,¹¹ making vitamin D an attractive alternative.

A systematic review revealed that abnormal low vitamin D levels increased the severity of primary dysmenorrhea, while vitamin D and calcium supplements reduced the severity and decreased the need for pain-relievers.¹²

It's important to remember that calcium, vitamin D3, magnesium and vitamin K2 must be properly balanced for optimal overall health. Your best and safest bet is to simply eat

more calcium-, magnesium- and vitamin K2-rich foods, along with sensible sun exposure.

A study of 85 adolescents also revealed that vitamin D could be a viable therapeutic option to reduce the severity of primary dysmenorrhea. Participants received 50,000 IU of vitamin D weekly for five months, which significantly increased vitamin D levels while reducing dysmenorrhea symptoms.¹³

Vitamin D May Also Relieve Chronic Pain, Uterine Fibroids

In terms of other pain-related conditions, patients with arthritis, muscle pain and chronic widespread pain had significantly lower vitamin D levels than those without pain in a systematic review and meta-analysis.¹⁴

Vitamin D may also be useful for other reproductive conditions aside from dysmenorrhea, including **uterine fibroids**, which are growths that develop from the muscle tissue of the uterus. They can cause a variety of symptoms depending on their size, location and number, including heavy menstrual bleeding, prolonged periods, pelvic pain and impacts to fertility.

One study examined how vitamin D levels might affect the development and progression of uterine fibroids, and compared women with vitamin D levels equal to or greater than 30 nanograms per milliliter (ng/mL) to those with serum levels lower than 20 ng/mL.¹⁵

Among the 1,610 women included in the study, vitamin D levels equal to or greater than 20 ng/mL were associated with an estimated 9.7% reduction in the growth of fibroids when compared to people with vitamin D levels below 20 ng/mL.

When the researchers looked at the data of individuals with vitamin D levels equal to or greater than 30 ng/mL, it was associated with an approximately 22% reduction in the incidence of fibroids compared to individuals with levels less than 30 ng/mL. The group with the highest vitamin D levels of greater than 30 ng/mL also had a 32% increase in fibroid tissue loss.

Sunlight Is the Best Source of Vitamin D

I strongly recommend getting your vitamin D from proper sun exposure, if possible, as it provides benefits beyond vitamin D optimization. Higher levels of vitamin D may even serve as a marker for healthy sun exposure, which in turn may be responsible for many of the health benefits, which include reduced risk of cancer and increased longevity, attributed to vitamin D.

Regular sun exposure, for instance, enhances production of melatonin – a potent anticancer agent.¹⁶ However, if you're unable to get adequate sun exposure each day, vitamin D supplementation may be necessary. The global prevalence of vitamin D deficiency (defined as a level of less than 20 ng/mL) and insufficiency (defined as a level of 20 to less than 30 ng/mL) is 40% to 100%,¹⁷ so many people are lacking.

Further, 20 ng/mL has repeatedly been shown to be grossly insufficient for good health and disease prevention, which means the true prevalence of people without optimal levels of vitamin D is even greater. The only way to determine how much sun exposure is enough and/or how much vitamin D3 you need to take is to measure your vitamin D level, ideally twice a year.

Once you've confirmed your vitamin D levels via testing, adjust your sun exposure and/or vitamin D3 supplementation accordingly. Then, remember to retest in three to four months to make sure you've reached your target level.

The optimal level for health and disease prevention is between 60 ng/mL and 80 ng/mL (150-200 nmol/L), while the cutoff for sufficiency appears to be around 40 ng/mL. In Europe, the measurements you're looking for are 150 to 200 nmol/L and 100 nmol/L respectively.

Progesterone Is a Key Treatment for Menstrual Pain

Progesterone controls prostaglandin production, and when progesterone levels decrease just before menstruation, prostaglandin levels increase. Women with

dysmenorrhea have increased prostaglandin levels.¹⁸ Oral contraceptives, which often include progesterone or a synthetic form of it known as progestin, are commonly prescribed to manage dysmenorrhea – but they can **destroy your health**.

Instead, progesterone supplementation may help. The dose of bioidentical progesterone I recommend is 30 milligrams (mg) to 50 mg a day, mixed with a long-chain fat as described below, taken orally in the evening before bed, as it can promote sleepiness.

Women who still menstruate need to be careful with the timing of their **progesterone supplementation**, however. Progesterone is crucial for successful pregnancy, and you can severely inhibit your ability to get pregnant if you take it at the wrong time. (During pregnancy, progesterone actually skyrockets. In the third trimester, women produce about 600 mg a day.)

If your menses are regular, start taking progesterone on the 14th day after your menstrual flow begins, and take it for 14 days straight (until cycle day 27). If your cycles are short, start on day 12 and continue for 14 days. Always take the progesterone for the full 14 days even if your menses begin before the 14 days are over. Start the next progesterone 14 days after the flow began.¹⁹

There's no toxicity to progesterone, unlike estrogen and testosterone, neither of which I recommend. Supplementing progesterone also will not lower your natural production, so you don't need to be concerned about that. In fact, it enhances your natural production.

Progesterone, meanwhile, needs to be mixed into vitamin E for optimal bioavailability. Health Natura sells a progesterone in vitamin E product. Alternatively, you can make your own by dissolving pure USP progesterone powder in one capsule of high-quality vitamin E. The difference in bioavailability between taking progesterone orally without vitamin E and taking it with vitamin E is 45 minutes versus 48 hours.

Another good reason for taking progesterone with vitamin E is that it binds to red blood cells, which allows the progesterone to be carried throughout your body and be distributed to where it's needed the most. What's more, Georgi Dinkov cites research

showing that when you dissolve a substance in vitamin E, it specifically targets sites with the highest inflammation, which may be particularly relevant for dysmenorrhea.

Ginger is another natural option. Evidence from six clinical trials showed ginger was effective to some degree in decreasing pain in women with dysmenorrhea.²⁰ Fennel is another remedy for menstrual cramps and may relieve pain from primary dysmenorrhea as well as common NSAIDs.²¹

Sources and References

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