

Vitamin D shrinks fibroid tumors in rats

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Treatment with vitamin D reduced the size of uterine fibroids in laboratory rats predisposed to developing the benign tumors, reported researchers funded by the National Institutes of Health.

Uterine fibroids are the most common noncancerous tumors in women of childbearing age. Fibroids grow within and around the wall of the uterus. Thirty percent of women 25 to 44 years of age report fibroid-related symptoms, such as lower back pain, heavy vaginal bleeding or painful menstrual periods. Uterine fibroids also are associated with infertility and such pregnancy complications as miscarriage or preterm labor. Other than surgical removal of the uterus, there are few treatment options for women experiencing severe fibroid-related symptoms and about 200,000 U.S. women undergo the procedure each year. A recent analysis by NIH scientists estimated that the economic cost of fibroids to the United States, in terms of health care expenses and lost productivity, may exceed \$34 billion a year.

Fibroids are three to four times more common in African-American women than in white women. Moreover, African-American women are roughly 10 times more likely to be deficient in [vitamin D](#) than are white women. In previous research, the study authors found that vitamin D inhibited the growth of human fibroid cells in laboratory cultures.

"The study results provide a promising new lead in the search for a non-surgical treatment for fibroids that doesn't affect fertility," said Louis De Paolo, Ph.D., chief of the Reproductive Sciences Branch of the NIH's Eunice Kennedy Shriver National Institute of Child Health and Human

Development, which funded the study.

First author Sunil K. Halder, Ph.D., of Meharry Medical College in Nashville conducted the research with Meharry colleagues Chakradhari Sharan, Ph.D., and Ayman Al-Hendy, M.D., Ph.D., and with Kevin G. Osteen, Ph.D., of Vanderbilt University Medical Center, also in Nashville. The findings appeared online in the journal [Biology of Reproduction](#).

For the current study, the researchers tested the vitamin D treatment on a strain of rats genetically predisposed to developing fibroid tumors. After examining the animals and confirming the presence of fibroids in 12 of them, the researchers divided the rats into two groups of six each: those that would receive vitamin D and those that would not.

In the first group, small pumps implanted under the skin delivered a continuous dose of vitamin D for three weeks. The researchers then examined the animals in both groups. Fibroids increased in size in the untreated rats, but, in the rats receiving vitamin D, the tumors had shrunk dramatically. On average, uterine fibroids in the group receiving vitamin D were 75 percent smaller than those in the untreated group.

The amount of vitamin D the rats received each day was equivalent to a human dose of roughly 1,400 international units. The recommended amount of vitamin D for teens and adults age 70 and under is 600 units daily, although up to 4,000 units is considered safe for children over age 9, adults, and for pregnant and breastfeeding females.

"Additional research is needed to confirm vitamin D as a potential treatment for [women](#) with [uterine fibroids](#)," said Dr. Al-Hendy. "But it is also an essential nutrient for the health of muscle, bone and the immune system, and it is important for everyone to receive an adequate amount of the vitamin."

Fatty fish such as salmon, mackerel and tuna are the best natural sources of the vitamin. Very few foods naturally contain vitamin D. Fortified milk and other fortified foods provide an additional source of the vitamin. Vitamin D is also produced when ultraviolet rays from sunlight strike the skin.

Provided by National Institutes of Health

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