

Vitamin D deficiency linked to poorer breast cancer outcomes: study

<http://www.cbc.ca/health/story/2008/05/15/vitamind-breast-cancer.html>

Last Updated: Thursday, May 15, 2008 | 11:15 PM ET [Comments5Recommend29](#)

The Canadian Press

Women who are deficient in vitamin D when diagnosed with breast cancer may have a poorer prognosis compared with those having optimal amounts of the sunshine nutrient in their blood, a Canadian study suggests.



Dr. Pam Goodwin, principal researcher on the study and a clinician-scientist at Toronto's Mount Sinai Hospital, says it's too early to tell women with breast cancer to take vitamin D supplements just to prevent a recurrence. (CBC)

The study by Toronto researchers, released Thursday by the American Society of Clinical Oncology, found that women with low levels of vitamin D were at increased risk for having a more serious grade of breast tumour than those with sufficient vitamin D.

Furthermore, women with too little of the vitamin had a greater chance of recurrence and lower overall survival rates than those with healthier amounts, said principal investigator Dr. Pamela Goodwin, a clinician-scientist at Mount Sinai Hospital.

"Women who had low levels of vitamin D tended to have more aggressive tumours than women who had high levels of vitamin D," Goodwin told CBC News Thursday. "The women who had deficient levels compared to the women who had sufficient levels had an almost doubled risk of metastasis and of dying from breast cancer."

She emphasizes that the association between vitamin D and breast cancer outcome has not been shown to be causal.

"We realize that a lot of women with breast cancer will be wondering what they should do about their vitamin D supplements," Goodwin added.

"For now, we're recommending that they consider taking a supplement that is in the range recommended for bone health, and for many women that's 600, 800 international units a day," she said.

She points out that women of colour may have lower vitamin D levels, as the pigment in their skin prevents them from producing as much of the vitamin when exposed to the sun.

She said that taking high doses of vitamin D isn't a good idea, as there was some preliminary evidence in the study that too much of the vitamin was linked to an increased risk of death during the study period.

Huge contrast in 10-year survival rates

The study involved 512 women, aged 35 to 69, who were diagnosed with breast cancer between 1989 and 1996, then had their health followed until 2007, on average for almost 12 years.

"What we found was that 37.5 per cent of our patients were vitamin D deficient and 38.5 per cent were insufficient," said Goodwin, noting that sufficiency was based on levels considered optimal for good bone health.

"Only 24 per cent had sufficient levels of vitamin D in their blood."

Having too little vitamin D was associated with a younger age, obesity and a lower intake of grains and cereals, which in Canada are fortified with the nutrient. Blood levels were measured in both summer and winter months, but little difference in levels was found.

Vitamin D status at diagnosis was linked to a greater risk of seeing cancer recurrence or spread, with 10-year metastasis-free survival at 69 per cent for women who were deficient versus 83 per cent for those with optimal vitamin D.

There was also a huge contrast in overall 10-year survival between the two groups: 74 per cent among those with too little of the vitamin compared to 85 per cent with enough.

Goodwin said it appeared that having a vitamin D level of 80 to 120 nanomoles per litre of blood is ideal.

"So what we're saying is if you have breast cancer and you're interested in taking vitamin D, consider taking it in the dose level recommended for bone health and also consider asking your physician to do a vitamin D blood level," she said.

"That's a simple blood test and that way you can regulate how much vitamin D you're taking to make sure your blood level is in the range that's safe for bone health as well as for breast cancer outcomes."

Heather Chappell, a breast cancer survivor who lives in Nova Scotia, said that since being diagnosed nine years ago, she's been looking to improve her chances of fending off the disease should it return. She recently began taking a vitamin D supplement.

"Of course in Nova Scotia we don't get a lot of sunlight — especially this winter — because of all the storms. It's great that you can just go to a drugstore and pick up some vitamin D, and at least it makes us think that we're improving our chances."

B.C. oncologist says more study needed

Dr. Stephen Chia, a medical oncologist at the B.C. Cancer Agency, called the study "very interesting."

"We need to better understand as many factors as we can in terms of why some women do better with breast cancer versus others who don't," Chia said from Vancouver.

"And this is looking at something that I think is interesting all round, both to patients and physicians, because vitamin D is essential for many normal body functions."

A number of studies have also suggested that vitamin D may help prevent some cancers, among them breast and colorectal cancers.

But Chia said this study must be taken in the context that much more research is needed to determine whether taking the nutrient could help improve the course of breast cancer and its outcome.

"There's not enough here to say this is a breast cancer treatment today."

Only a few foods contain vitamin D, among them egg yolks and certain types of fish; the best way to obtain the nutrient is through exposing the skin to sunlight.

Last year, the Canadian Cancer Society recommended in general that adults should take a daily supplement containing 1,000 international units of vitamin D, after a growing body of research suggested the nutrient may help prevent some cancers.

© The Canadian Press, 2008

THE CANADIAN PRESS 

IN DEPTH

Health

Vitamin D: Boning up on the sunshine vitamin

<http://www.cbc.ca/health/story/2008/05/16/f-health-vitamin-d.html>

Last Updated: Friday, May 16, 2008 | 11:01 AM ET [Comments1](#) [Recommend17](#)

[CBC News](#)



(Andrew Vaughan/Canadian Press)

Imagine incorporating an inexpensive, single supplement into your life that forces you to get a little sunshine and promises to strengthen your bones, thwart different forms of cancer, stave off multiple sclerosis and autoimmune disorders and fight infections.

New research into the preventive benefits of vitamin D has raised hopes that the sunshine vitamin, which is produced naturally in the body through exposure to the sun's ultraviolet rays, could extend and improve people's lives.

In September 2007, an analysis of 18 randomized controlled trials involving people over the age of 50 found that people who took at least 500 international units (IU) of vitamin D daily had a seven per cent lower risk of death compared with those given a placebo.

Lead researcher Dr. Philippe Autier said it was not clear how the supplements lowered risks of mortality, but he suggested that Vitamin D may block cancer cell proliferation or improve blood

vessel and immune system functions. The study, published in the Archives of Internal Medicine, reviewed research involving 57,311 participants.

The new findings are part of a growing body of research regarding vitamin D's benefits. In June 2007, the Canadian Cancer Society said that based on current research adults should consider increasing their daily dosage of vitamin D. The society said Canadians should now consume 1,000 IU of vitamin D daily during the fall and winter months, in consultation with a health-care provider.

The society noted, however, that more research on appropriate dosage levels is needed and said it would update its recommendations as new studies are released.

In making its recommendations, the society referred to new research including a study published in the June issue of the American Journal of Clinical Nutrition. Researchers at Creighton University School of Medicine in Omaha found a 60 to 77 per cent decrease in cancer rates in postmenopausal women who took a daily dose of 1,100 IU of vitamin D combined with calcium over women who were given a placebo or calcium alone. The double-blind clinical study, conducted over four years, tested healthy women over the age of 55 living in rural Nebraska. Critics of the study cautioned that a larger study would have yielded more reliable and conclusive results.

But Reinhold Vieth, a nutritional scientist at the University of Toronto, said the new study is the last piece of evidence for which many in the field have been waiting. Vieth said that many cells in the body use vitamin D to produce a signaling molecule that allows the cells to communicate with each other.

"Those signals do things like helping cells to differentiate to recognize what kind of cell they should be becoming or they can signal cells to stop proliferating and those are good things in terms of cancer, you want differentiation so they become good well-behaved cells and you don't want them to keep replicating all the time," he said.

Other researchers have begun studying how the sunshine vitamin affects other forms of cancer.



Tourists soak up the sun while walking along Patong Beach in Phuket, Thailand, in December 2005. Recent studies indicate that vitamin D, which is produced naturally in the body through exposure to the sun's ultraviolet rays, can extend and improve people's lives. (David Longstreath/Associated Press) Researchers at the University of California, San Diego, suggested in the March 2007 issue of the American Journal of Preventive Medicine

that taking 2,000 IU of vitamin D daily along with 10 to 15 minutes in the sun and a healthy diet could reduce the incidence of colorectal cancer by two-thirds. The same authors found that breast cancer rates were 50 per cent lower in people with high levels of vitamin D in their blood, and suggested that the average person could maintain those levels by taking 2,000 IU of vitamin D daily and spending 10 to 15 minutes in the sun.

Similarly, a December 2006 study in more than seven million people found that white members of the U.S. military who had high blood levels of vitamin D were 62 per cent less likely to develop multiple sclerosis than those with the lowest levels of the vitamin. Researchers noted the findings were still too preliminary to suggest that a lack of vitamin D could trigger the nerve disorder.

A study published in the Archives of Internal Medicine on May 28, 2007, suggested that women who consume higher amounts of calcium and vitamin D may have a lower risk of developing breast cancer before menopause. The study followed more than 31,000 women aged 45 and older for 10 years. It found that intake of calcium and vitamin D was moderately associated with a lower risk of breast cancer before — but not after — menopause.

Yet another study — released on May 15, 2008 — found that women with low levels of vitamin D may have a poorer prognosis than those with sufficient vitamin D. The study by Toronto researchers also found that women with too little of the vitamin had a greater chance of recurrence and lower overall survival rates than those with healthier amounts.

The study involved 512 women, aged 35 to 69, who were diagnosed with breast cancer between 1989 and 1996. Their health was followed until 2007, on average for almost 12 years. The researchers found that 37.5 per cent of the patients were vitamin D deficient and 38.5 per cent had levels that were considered insufficient for good bone health. Only 24 per cent had sufficient levels of vitamin D in their blood.

The researchers say their study shows there is an association between vitamin D levels and breast cancer outcome. They say it's too early to tell whether vitamin D deficiency can cause the disease.

In 2004, researcher Kenneth Saag of the University of Alabama at Birmingham suggested that Vitamin D might quell the onset of rheumatoid arthritis in older women. His preliminary study found that women who had a dietary intake of 290 IU daily were 28 per cent less likely to develop the disease.

Dr. John Cannell, the executive director of the U.S. Vitamin D Council, in 2006 published a study in the Journal of Epidemiology and Infection suggesting among other things that children who are exposed regularly to sunlight are less likely to catch colds and respiratory infections. A separate 2006 study published in the journal Science suggested that Vitamin D might boost the body's production of naturally occurring antibiotics.

Bolstered by the benefits the sunshine vitamin offers, public health officials are encouraging people to include vitamin D in their diets as researchers continue to investigate how it helps the body.

What is vitamin D?

Vitamin D helps the body absorb calcium thereby making bones stronger. Certain foods such as cow's milk and margarine are fortified with vitamin D and inexpensive supplements can help boost the body's vitamin D levels.

A deficiency in children can trigger rickets, a bone disease that leaves children with soft bones and skeletal deformities. As breast milk doesn't contain sufficient levels of vitamin D, public health officials recommend that infants who are exclusively breastfed should take a supplement to prevent vitamin D deficiency.

In adults, low levels of vitamin D can cause osteoporosis, a disease that decreases bone mass and bone tissue, putting patients at risk of fractures. People with darker skin tones are also often advised to take a supplement as they have more difficulty generating natural vitamin D from the sun's ultraviolet rays.

As well, patients with a reduced ability to absorb dietary fat, including people suffering from Crohn's disease, cystic fibrosis or liver disease, often have low vitamin D levels.

For Canadians who suffer through long grey winters, maintaining adequate levels of vitamin D can be difficult. From October through March in many cities across the country, the sun's rays are not strong enough to synthesize the vitamin naturally. Moreover the skin's ability to produce the vitamin drops with age, putting men and women over the age of 50 at particular risk.

To that end, Health Canada spotlighted the benefits of vitamin D when it released the new edition of the Canada Food Guide in February 2007. The guide says that boosting levels of vitamin D will improve muscle strength and reduce fracture and falling rates.

Source: B.C. Ministry of Health

Food	Serving Vitamin D	
Milk	1 cup	100 IU
Fortified rice or soy beverage	1 cup	100 IU
Fortified margarine	2 tsp	53 IU
Salmon canned, pink	3 oz	530 IU
Tuna canned, light	3 Oz	200 IU

Fortified foods and a dose of sunshine

The Canada Food Guide says men and women over the age of 50 are advised to consume three servings of milk and alternatives along with a supplement equal to 10 micrograms or 400 IU of Vitamin D every day. One cup of milk has 100 IU of vitamin D. All other age groups are encouraged to have two cups of milk to ensure adequate vitamin-D levels.

Some companies have fortified their products with vitamin D but Health Canada notes that fatty fish and egg yolks are the only natural food sources.

Isabelle Neiderer, the director of nutrition for the Dairy Farmers of Canada, said her group met with Health Canada officials earlier this year to discuss the possibility of fortifying cheese and yogurt with vitamin D.

"We feel, considering the large scientific evidence that we see at the moment ... that it would be a good thing that other milk products could be fortified as well," she said.

In the United States, vitamin D can be added to cheese and yogurt products.

While exposure to sun may be the best way to boost vitamin D levels, this doesn't necessarily give sun lovers licence to tan. While being mindful of the threat of skin cancer, people should calculate how much time they spend in the sun depending on location, cloud cover, skin type, age and the amount of pollution in the area. Generally, doctors recommend that 10 to 15 minutes outdoors without sunscreen at least twice a week is adequate.

The Canadian Cancer Society, though, does not recommend that people rely solely on increasing their exposure to the sun to boost their levels of vitamin D. The society points out that there are other sources of vitamin D, including vitamin supplements, oily fish and fortified foods.

It also warns that — for some people — increasing exposure to the sun by even a few minutes a day could increase the risk of skin cancer. The society recommends that people consider a balance of vitamin D supplements and small amounts of sun exposure to maintain proper levels of the vitamin while keeping risks of skin cancer to a minimum.

But a study by scientists at the U.S. Department of Energy's Brookhaven National Laboratory that was published in National Academy of Sciences on Jan. 7, 2008, suggested that increasing sun exposure can be good — for some people.

The study concludes that the benefits of moderately increased exposure to the sun's rays may outweigh the risks of developing skin cancer. The benefits include the body's increased production of vitamin D, which can help reduce the risk of death from other forms of cancer.

The study's authors note that the most dangerous form of skin cancer is melanoma, which is triggered by exposure to UVA (the long ultra violet wavelengths of the sun) and visible light. Exposure to UVB (the short wavelengths produced by the sun) trigger the body's production of vitamin D. The authors suggest that sunscreens could be reformulated to block UVA rays while allowing more UVB rays through.

As researchers continue to explore how the vitamin helps the body, Health Canada warns overenthusiastic consumers that exceptionally high levels can be damaging. The U.S.-based Institute of Medicine of the National Academies has set 2,000 IU of vitamin D as the daily maximum tolerable amount. Health Canada warns exceeding this limit could lead to an overdose that can cause kidney stones as well as damage to the heart, lungs and blood vessels.

© The Canadian Press, 2008

THE CANADIAN PRESS 

End