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Does Vitamin D Reduce the Risk of Getting Cancer?

By Julie Grisham, Thursday, August 9, 2018



Vitamin D is often called the sunshine vitamin, but it's also found in many foods.

Summary

Two recent studies have suggested a correlation between low levels of vitamin D and increased incidence of cancer. Our experts discuss the science behind them.

In June 2018, two papers were published that suggested that high levels of vitamin D circulating in the blood may be associated with a lower risk of cancer. One looked at **breast cancer** and the other at **colon** and **rectal cancer**.

These are only the latest in a large number of studies on vitamin D and cancer published over the past few decades. Some have looked at prevention and others at whether vitamin D improves outcomes after someone has been diagnosed. The findings overall have been mixed.

We spoke with Memorial Sloan Kettering medical oncologists **Leonard Saltz**, a colorectal cancer expert, and **Monica Fornier**, a breast cancer expert, about these studies. Here's what you should know about the "sunshine vitamin" and its connection to cancer.

What did these latest studies show?

The **colon cancer study**, published in the *Journal of the National Cancer Institute*, combined data from 17 other studies that followed a total of more than 12,000 people. It found that levels of vitamin D in the blood that are considered deficient (below 20 nanograms per milliliter, or ng/mL) were associated with a 31% higher cancer incidence compared with those in the high range (between 50 and 62.5 ng/mL).

The **breast cancer study**, published in *PLoS One*, looked at more than 5,000 women ages 55 and older. It found that women with high vitamin D levels in their blood (60 ng/mL or more) had an 80 percent lower incidence for breast cancer compared with those who had low levels (20 ng/mL or less). The researchers also found that among women with vitamin D blood levels in the upper range, the highest levels were associated with the lowest incidence.

What are the limitations of this kind of research?

"These findings are compelling, but we have to be careful about studies that link lifestyle to cancer," Dr. Fornier says. "It's hard to make direct connections because there are so many possible factors."

“One big caveat is that having high vitamin D levels could just mean that someone has a better lifestyle and a healthier diet,” Dr. Saltz adds. “It’s also important to note that a link has not been found in a controlled study looking at whether taking vitamin D after colon cancer surgery can prevent recurrence.”

He also refers to [another study](#), published in July 2018 in *JAMA Oncology*, which concluded that taking high doses of vitamin D was not associated with cancer prevention and should not be done for this purpose.

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Leonard Saltz
medical oncologist

What does vitamin D do in the body?

One of the most important jobs of vitamin D is maintaining bone health. It helps to promote the absorption of calcium from food into the intestines. It also maintains the levels of calcium and phosphate in the blood that are needed for bone formation and regeneration.

Much less is known about the role that the vitamin might play in cancer, but it may have to do with its function in regulating pathways related to cell growth and regulation. “There are some studies in the lab that suggest vitamin D may have certain cancer prevention properties due to the way it functions,” Dr. Saltz says. “However, the connection to how that may translate to a benefit in people is pretty soft.”

To fully understand the relationship, experts would need to conduct randomized clinical trials. If they were able to confirm the link, these studies could also look at the appropriate dose of vitamin D and determine how long someone would need to take it to see a benefit.

Are vitamin D deficiencies becoming more common?

Studies have suggested that more than one billion people worldwide have vitamin D deficiencies, including more than 40% of the US population. “People don’t spend their lives outside as much as they used to,” Dr. Fornier explains. “Many people are scared to get any sun at all because of concerns about skin cancer. Of course, it’s important to be careful, but a little bit of sun, especially early or late in the day when it is less strong, is not bad.”

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Diet also plays a role, and many people may not consume enough foods that are rich in vitamin D. These foods include certain types of fish and other seafood and eggs. Some foods, including milk, orange juice, and many cereals, are also fortified with vitamin D.

Dr. Fornier adds that because of the side effects of certain breast cancer treatments, maintaining healthy levels of vitamin D is especially important for the people she treats. [Hormone therapies](#) used to treat breast cancer, particularly the class of drugs called aromatase inhibitors, can reduce bone density and make fractures more common.

Based on what we know, should people take vitamin D supplements to reduce cancer risk?

“It would be great if you could go down to the pharmacy and grab a bottle of vitamin D, and then you would never have to worry about cancer again,” Dr. Saltz says. “But of course it’s not that simple.”

Right now, the Institute of Medicine doesn’t find enough evidence to recommend vitamin D as a way to prevent cancer, he notes. (The IOM provides evidence-based research and recommendations for public health and science policy.) “But it does say that vitamin D is important for bone health, and we very much support that for people whose levels are found to be low,” he adds.

In addition, taking vitamin D at very high levels can result in digestive and kidney problems.

What else can people do to reduce their cancer risk?

If people are concerned about their risk of colorectal cancer, there are many measures they can take, Dr. Saltz says. “We know that people who eat a healthy diet that’s low in refined carbohydrates and sugar and high in whole grains, vegetables, and seafood have a decreased risk of colon cancer. Data also suggest that **high consumption of tree nuts** — but not peanuts — is associated with a lower risk of recurrence after surgery for colon cancer. In addition, there’s also evidence that drinking coffee is correlated with decreased risk for colon cancer. I was happy to hear that.”

Dr. Fornier emphasizes the importance of regular exercise as well. “We are learning more and more about the importance of exercise, not just for general health but for bone health and mental health in particular,” she says. “A bottle of vitamins cannot substitute for a healthy lifestyle.”

Comments

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Maria Carlino

Aug 26, 2018 • 3:05 PM

I wish researcher would look at the correlation of injuring your breasts and years later developing breast cancer. It happened to me.

Memorial Sloan Kettering

Aug 27, 2018 • 11:34 AM

Maria, we understand your concern about a possible link between injury and developing breast cancer. We consulted with Memorial Sloan Kettering medical oncologist Larry Norton, who comments:

“This has been extensively studied and there is no causal relationship between trauma and breast cancer. Yes, coincidentally a bump to the breast has called attention to a malignant lump in the breast, but that doesn’t mean the injury caused the cancer.”

Debra Waldman

Aug 28, 2018 • 6:54 PM

Wonder if higher levels of vitamin D is recommended for one diagnosed with LCIS (me) and for one diagnosed with Crohn’s disease (my son)