

Vitamin D Status is Not Associated with Risk for Less Common Cancers

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(PhysOrg.com) -- Despite hopes that higher blood levels of vitamin D might reduce cancer risk, a large study finds no protective effect against non-Hodgkin lymphoma or cancer of the endometrium, esophagus, stomach, kidney, ovary, or pancreas.

In this study, carried out by researchers from the National [Cancer Institute](#) (NCI), part of the National Institutes of Health, and many other research institutions, data based on blood samples originally drawn for 10 individual studies were combined to investigate whether people with high levels of [vitamin D](#) were less likely to develop these rarer cancers. Details of these analyses appear as a set of papers in the June 18, 2010, online issue of the [American Journal of Epidemiology](#), and in print in the July 2010 issue.

"We did not see lower cancer risk in persons with high vitamin D blood concentrations compared to normal concentrations for any of these cancers," said Demetrius Albanes, M.D., NCI, one of the study investigators. "And, at the other end of the vitamin D spectrum, we did not see higher cancer risk for participants with low levels."

As part of a collaborative effort of the NCI Cohort Consortium, investigators from the Vitamin D Pooling Project of Rarer Cancers examined vitamin D levels in blood that had been collected from over 12,000 men and women participating in one of the studies. Some of those individuals went on to develop cancer. Vitamin D concentrations were measured using 25-hydroxyvitamin D (25(OH)D), which is the

major form of this vitamin in the bloodstream.

Participants were followed for the development of cancer for up to 33 years, depending on the study. Investigators then compared cancer rates in participants whose levels of vitamin D in stored blood were high (above 75 nmol/L, or nanomoles per liter) or low (less than 25 nmol/L) with rates in participants whose levels of vitamin D were within the normal range (50 to 75 nmol/L).

For the small number of participants with vitamin D levels greater than 100 nmol/L, investigators observed elevated risk of pancreatic cancer, but not for the other cancers in these studies. They recommended further research to clarify this relationship.

Vitamin D is made naturally by the body when the skin is exposed to sunlight; it can also be obtained from a few foods in which it occurs naturally, from fortified foods, and from nutritional supplements. Vitamin D is essential for healthy bones, calcium absorption, and immune function.

Researchers and clinicians have looked to the possibility that vitamin D might be used for cancer prevention. Some evidence indicates that higher levels of vitamin D are associated with a lower risk of colorectal cancer, though the evidence is inconsistent.

Through the Vitamin D Pooling Project, researchers had access to a geographically and demographically diverse group of men and women, including participants from the United States, Finland, and China.

In this collection of groups of study participants, the proportion of the study population that was deficient in vitamin D varied from 3 percent to 36 percent, depending on geographical latitude, season during which the blood was collected, race, and other factors. The investigators had a

wealth of other information on participants, including smoking history, lifestyle, and diet. As in other studies, individuals with higher 25(OH)D levels were more likely to be male, lean, and physically active. Those with higher levels also reported greater intake of multivitamins, calcium supplements, and foods rich in vitamin D.

"In this pooled analysis of cohort data, vitamin D was not associated with lower risk for these less common cancers, despite well-established benefits for bone health," concluded Albanes.

Many people in the United States and around the world have low concentrations of 25(OH)D. The current recommended daily intake of vitamin D to maintain bone health and normal calcium metabolism, according to the Food and Nutrition Board of the Institute of Medicine, National Academy of Sciences, ranges from 200 IU (international units) to 600 IU, depending on age, with the highest dose recommendations being for the elderly. In addition, the 2005 Dietary Guidelines for Americans recommends that older adults, people with dark skin, and those exposed to insufficient sunlight consume extra vitamin D from vitamin D-fortified foods and/or supplements. Since there are very few foods which naturally contain vitamin D (fatty fish, fish liver oil, and eggs), most dietary vitamin D comes from fortified foods such as milk, juice, yogurt, bread and breakfast cereals.

More information: References:

Nine papers, all appearing in the American Journal of Epidemiology, online June 18, 2010, and in print in the July 2010 issue:

- Overview of the Cohort Consortium Vitamin D Pooling Project of Rarer Cancers. Kathy J. Helzlsouer for the VDPP Steering Committee.
- Circulating 25-hydroxyvitamin D and Risk of Esophageal and Gastric Cancer: Cohort Consortium Vitamin D Pooling Project of Rarer

Cancers. Abnet C.C., Chen Yu, et. al.

-- Circulating 25-hydroxyvitamin D and Risk of Pancreatic Cancer: Cohort Consortium Vitamin D Pooling Project of Rarer Cancers.

Stolzenberg-Solomon R, Jacobs EJ, et.al.

-- Circulating 25-hydroxyvitamin D and Risk of Kidney Cancer: Cohort Consortium Vitamin D Pooling Project of Rarer Cancers. Gallicchio L, Moore LE, et. al.

-- Circulating 25-hydroxyvitamin D and the Risk of Rarer Cancers: Cohort Consortium Vitamin D Pooling Project of Rarer Cancers Design and Methods. Gallicchio L, Helzlsouer KJ, et. al.

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-- Circulating 25-hydroxyvitamin D and Risk of Epithelial Ovarian Cancer: Cohort Consortium Vitamin D Pooling Project of Rarer Cancers. Zheng W, Danforth KN, et. al.

-- Circulating 25-hydroxyvitamin D and Risk of non-Hodgkin Lymphoma: Cohort Consortium Vitamin D Pooling Project of Rarer Cancers. Purdue MP, Michal Freedman D, et. al.

-- Correlates of circulating 25-hydroxyvitamin D: Cohort Consortium Vitamin D Pooling Project of Rarer Cancers. McCullough ML, Weinstein SJ, et. al.

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