

Dietary Vitamins B6 and B12 and Folate May Decrease Pancreatic Cancer Risk Among Lean People

Researchers exploring the notion that certain nutrients might protect against pancreatic cancer found that lean individuals who got most of these nutrients from food were protected against developing cancer. The study also suggests this protective effect does not hold true if the nutrients come from vitamin supplements.

In a study published in the June 1, 2007 issue of *Cancer Research*, a journal of the American Association for Cancer Research, investigators combined data from four large studies and found that people who were at or below normal body weight decreased their risk for developing pancreatic cancer if they took in high levels of vitamin B6, vitamin B12, and folate from food. The study determined that their risk was 81%, 73%, and 59% lower with vitamin B6, vitamin B12, and folate, respectively, compared with participants who did not eat as much of these nutrients or who weighed more. According to the researchers, that was the only statistically significant finding from the study, which is the largest yet to look at these nutrients and pancreatic cancer risk.

"All we can say is that a person who has reason to be concerned about their risk of developing this cancer, which is relatively rare but quite deadly, should maintain a normal weight and eat their fruit and vegetables," said the study's lead investigator, Eva Schernhammer, MD, DPH, an assistant professor of medicine at Harvard Medical School.

The researchers also say that they uncovered another interesting trend – that some people who received these nutrients from multivitamin pills had an increased risk of developing the disease. According to the researchers, individuals who said they used multivitamins, and whose blood showed traces of these nutrients, had a 139% increased relative risk of

developing pancreatic cancer. "This is a preliminary, but intriguing, finding because it suggests that something in the vitamins may fuel pancreatic cancer growth," Dr. Schernhammer said.

This isn't the first study to suggest that folate and vitamins B6 and B12 – so-called one-carbon nutrients – are protective against pancreatic cancer if they come from food, but not if they come from multivitamins, Dr. Schernhammer said. One large Finnish study found one-carbon food nutrients were associated with a decreased risk of developing pancreatic cancer, but that vitamin pills were not helpful. Two other large American studies also found food nutrients were protective, but that vitamin use was associated with a higher, yet non-significant risk of developing the cancer.

In this study, researchers combined four large prospective cohort studies: the Women's Health Initiative and three studies from the Harvard School of Public Health (the Nurses' Health Study, the Health Professionals Follow-up Study, and the Physician's Health Study). From this large database, they performed a prospective nested, case-controlled study to examine plasma concentrations of the nutrients from participants who had donated blood and answered questionnaires about their food intake and vitamin use before any cancer developed. Their analysis included 208 pancreatic cancer cases and 623 cancer-free control cases.

No one knows why vitamin pills may not help ward off cancer, or why, in this study, it might have a deleterious effect, Dr. Schernhammer said, but some research in animals suggests that "if there is a dormant tumor, folate and other similar vitamins may stimulate growth." That might be especially true if a person did not take in enough of these nutrients consistently through

diet and then suddenly started taking multivitamins in an effort to become healthy, she said.

"People think that dietary intake of these nutrients reflects a lifelong healthy eating habit, and in those cases, these nutrients may be protective, but they could have an opposite effect if they are used in a person with an occult cancer," Dr. Schernhammer said. "It might all depend on whether a person is cancer-free at the time they start using these nutrients." The same kind of association has been found with use of soy, which is an estrogen-rich food, she said. "Women who have eaten soy all their lives, such as people in Asia, have a reduced risk of developing breast cancer, but some studies have found that increased soy intake in women who have not eaten it before appears to be harmful."

The researchers say their study cannot definitively say that one-carbon nutrients either pose a benefit or a hazard to most people, but they note that it is the best analysis that can be performed outside of a randomized clinical trial. The study was funded by the National Institutes of Health.

The mission of the American Association for Cancer Research (AACR) is to prevent and cure cancer. Founded in 1907, AACR is the world's oldest and largest professional organization dedicated to advancing cancer research. The membership includes nearly 26,000 basic, translational, and clinical researchers; health care professionals; and cancer survivors and advocates in the United States and more than 70 other countries. AACR marshals the full spectrum of expertise from the cancer community to accelerate progress in the prevention, diagnosis, and treatment of cancer through high-quality scientific and educational programs. It funds innovative, meritorious research grants. The AACR Annual Meeting attracts more than 17,000 participants who share the latest discoveries and developments in the field. Special conferences throughout the year present novel data across a wide variety of topics in cancer research, treatment, and patient care. AACR publishes five major peer-reviewed journals: *Cancer Research*; *Clinical Cancer Research*; *Molecular Cancer Therapeutics*; *Molecular Cancer Research*; and *Cancer Epidemiology, Biomarkers & Prevention*. Its most recent publication, *CR*, is a magazine for cancer survivors, patient advocates, their families, physicians, and scientists. It provides a forum for sharing essential, evidence-based information and perspectives on progress in cancer research, survivorship, and advocacy. For more information, please visit <http://www.aacr.org>.

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