

# Medical News

Public Affairs and Media Relations  
614-293-3737



## Media Contact:

Amanda J. Harper  
OSUCCC – James Media Relations  
614-685-5420  
[Amanda.Harper2@osumc.edu](mailto:Amanda.Harper2@osumc.edu)

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## **Long-Term, High-Dose Vitamin B6/B12 Supplement Use Associated With Increased Lung Cancer Risk Among Men: Effect Magnified in Male Smokers**

COLUMBUS, Ohio – New research suggests long-term, high-dose supplementation with vitamins B6 and B12 — long touted by the vitamin industry for increasing energy and improving metabolism — is associated with a two- to four-fold increased lung cancer risk in men relative to non-users.

Risk was further elevated in male smokers taking more than 20 mg of B6 or 55 micrograms of B12 a day for 10 years. Male smokers taking B6 at this dose were three times more likely to develop lung cancer. Male smokers taking B12 at such doses were approximately four times more likely to develop the disease compared to non-users.

Epidemiologists from [The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute](#) (OSUCCC – James), Fred Hutchinson Cancer Research Center and National Taiwan University report their findings in the Aug. 22, 2017 issue of the *Journal of Clinical Oncology*.

This is the first prospective, observational study to look at the effects of long-term high-dose B6/B12 supplement use and lung cancer risk. These supplements have been broadly thought to reduce cancer risk.

For this study, [Theodore Brasky](#), PhD, of the OSUCCC – James, and colleagues analyzed data from more than 77,000 patients participants in the VITamins And Lifestyle (VITAL) cohort study, a long-term prospective observational study designed to evaluate vitamin and other mineral supplements in relation to cancer risk. All participants were aged between 50 and 76 were recruited in the state of Washington between the years 2000 and 2002.

Upon enrolling in the study, participants reported information to researchers about B-vitamin usage over the past 10 years. This included dosage information – a critical but often missing detail needed for strong risk assessment and association research.

For this new analysis, researchers used statistical techniques to adjust for numerous factors including: personal smoking history, age, race, education, body size, alcohol consumption, personal history of cancer or chronic lung disease, family history of lung cancer and use of anti-inflammatory drugs.

“This sets all of these other influencing factors as equal, so we are left with a less confounded effect of long-term B6 and B12 super-supplementation,” explains Brasky. “Our data shows that taking high doses of B6 and B12 over a very long period of time could contribute to lung cancer incidence rates in male smokers. This is certainly a concern worthy of further evaluation.”

Brasky notes these findings relate to doses that are well above those from taking a multivitamin every day for 10 years.

“These are doses that can only be obtained from taking high-dose B vitamin supplements, and these supplements are many times the U.S. Recommended Dietary Allowance,” he said.

Two additional studies are underway at The OSUCCC – James to further evaluate high dose, long-term B6 and B12 supplementation and lung cancer risk. One study will examine associations in post-menopausal women in order to confirm the current finding of no elevated risk in women. The second will examine B6/B12 high dose, long-term supplementation in a second large prospective study of men in an effort to determine whether the increases risk observed in the current study can be replicated.

This study was supported by the National Institutes of Health, the National Cancer Institute and the Office of Dietary Supplements. Collaborators include last author Chi-Ling Chen, PhD, of National Taiwan University, and Emily White, PhD, of Fred Hutchinson Cancer Research Center.

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### **About the OSUCCC – James**

The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute strives to create a cancer-free world by integrating scientific research with excellence in education and patient-centered care, a strategy that leads to better

methods of prevention, detection and treatment. Ohio State is one of 48 National Cancer Institute-designated Comprehensive Cancer Centers and one of only a few centers funded by the NCI to conduct both phase I and phase II clinical trials on novel anticancer drugs. As the cancer program's 308-bed adult patient-care component, The James is one of the top cancer hospitals in the nation as ranked by *U.S. News & World Report* and has achieved Magnet designation, the highest honor an organization can receive for quality patient care and professional nursing practice. With 21 floors and more than 1.1 million square feet, The James is a transformational facility that fosters collaboration and integration of cancer research and clinical cancer care. For more information, visit [cancer.osu.edu](http://cancer.osu.edu).

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