Folic acid, vitamins B6 and 12 do not affect colorectal adenoma risk

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Combined folic acid, vitamin B6 and vitamin B12 supplements had no statistically significant effect on the risk of colorectal adenoma among women who were at high risk for cardiovascular disease, according to a study published October 12 in the *Journal of the National Cancer Institute*.

Between 28% and 35% of the U.S. population reported to take dietary supplements containing folic acid, vitamin B6, and vitamin B12, and previous in vitro and animal studies have shown that B vitamins combat colorectal carcinogenesis, and some observational epidemiologic studies suggest a 20%-40% reduced risk in individuals with the highest intake of folate, but most randomized controlled trials have focused exclusively on folic acid supplementation. In order to determine the potential effects of folic acid, vitamin B6 and vitamin B12 on the risk of colorectal adenoma—a precursor to colorectal cancer— Yiqing Song, M.D., Sc.D., of the Harvard Medical School in Boston and colleagues conducted a study in the Women's Antioxidant and Folic Acid Cardiovascular Study (WAFACS), a randomized, double-blind, placebo-controlled trial which looked at 5,442 female health professionals who were at high risk for cardiovascular disease. The participants in the WAFACS, which took place between April 1998 and July 2005, were randomly assigned to a combination of folic acid, vitamin B6 and vitamin B12, or placebo. This analysis included 1,470 WAFACS participants who received a follow-up endoscopy at some point during the 9.2-year follow-up period.

The researchers found that the risk of colorectal adenoma among women was not statistically significantly affected by the intake of combined folic acid vitamin B6 and vitamin B12 supplementation. "Our findings do not support recommending B-vitamin supplementation for the prevention of colorectal adenomas," the researchers write, adding more evidence is needed in order to verify their findings. They also found that consumption of alcohol, known to be a folate "antagonist," did not influence the effect of supplements on colorectal adenoma risk.

In an accompanying editorial, Regina G. Ziegler, Ph.D., M.P.H., of the Division of Cancer Epidemiology and Genetics writes that the null results of the trial, that high doses of folic acid did not increase risk of colorectal adenoma during up to nine years of follow-up, are reassuring with respect to the US decision to fortify cereal-grain products with folic acid, beginning in 1998, to reduce neural tube defects. However, the null results are less pertinent to the protective potential of folate, B6, and B12 when given to men and women with suboptimal micronutrient intake. "Observational epidemiology results, from prospective studies of diet and supplements or of circulating biomarkers, are provocative and imply that the role of folate and other B vitamins in colorectal carcinogenesis merits continued exploration."

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