

Nutr Cancer. 2002;43(2):152-8.

Relationship of folate, vitamin B-6, vitamin B-12, and methionine intake to incidence of colorectal cancers.

Harnack L, Jacobs DR Jr, Nicodemus K, Lazovich D, Anderson K, Folsom AR.

Division of Epidemiology, School of Public Health, University of Minnesota,
Minneapolis, MN 55454, USA. harnack@epivax.epi.umn.edu

It is hypothesized that diets deficient in folate, methionine, and vitamins B-6 and B-12 cause DNA hypomethylation and, as a result, increase risk of colorectal cancers. Furthermore, it is proposed that alcohol, a methyl group antagonist, increases risk of colorectal cancers among those with low intake of folate. Data from the Iowa Women's Health Study, a population-based cohort of incident cancer, were used to examine the relationship of folate, methionine, and vitamins B-6 and B-12 to occurrence of cancers of the colon (n = 598) and rectum (n = 123) over 13 yr of follow-up. There were no independent associations of folate, methionine, or vitamins B-6 and B-12 derived from a food frequency questionnaire with incidence of colon cancer. Adjusted relative risks (RRs) of rectal cancer were similar across categories of folate, vitamin B-12, and methionine intake, but RRs increased progressively with increasing intake of vitamin B-6 [P (for trend) = 0.03]. RRs suggested that incidence of cancer of the proximal colon was lower among those with 1) high folate and high vitamin B-12 intake [RR = 0.59, 95% confidence interval (CI) = 0.39-0.89] and 2) high folate and high vitamin B-6 intake (RR = 0.65, 95% CI = 0.50-0.84) than among those with the lowest intake of these nutrients. Incidence of cancer of the proximal colon was also somewhat lower among those with high folate and low alcohol intake (RR = 0.44, 95% CI = 0.22-0.89). Findings provide limited support for an association between dietary factors involved in DNA methylation and risk of cancers of the colon and rectum.

PMID: 12588695 [PubMed - indexed for MEDLINE]