

Abstract

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Dietary calcium, vitamin D, and the risk of colorectal cancer.

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BACKGROUND: Calcium and vitamin D have a potential protective effect against colorectal cancer.

OBJECTIVE: We investigated the association of dietary intake of calcium and vitamin D with the risk of colorectal cancer in a large prospective cohort study of middle-aged Japanese men and women.

DESIGN: A total of 74 639 subjects (35 194 men and 39 445 women) who participated in the Japan Public Health Center-based Prospective Study were followed from 1995-1999 to the end of 2004, during which time 761 cases of colorectal cancer (464 men, 297 women) were newly identified. Dietary intake of nutrients was calculated with the use of a 138-item self-administered food-frequency questionnaire.

RESULTS: After adjusting for potential confounding factors, the multivariate hazard ratio in the highest quintile of dietary calcium intake compared with the lowest was 0.71 (95% CI: 0.52, 0.98) among men. The association appeared to decrease considerably among subjects in the second quintile without a clear further dose-response relation (P for trend: 0.09). No association was seen among women. No statistically significant association with dietary vitamin D intake was seen in either men or women, although men in the highest dietary intake group of both nutrients had a lower risk than did men in the lowest group.

CONCLUSIONS: These findings indicate a potential decrease in the risk of colorectal cancer with higher dietary intake of calcium among middle-aged Japanese men, who have a relatively low dietary intake of calcium. Although vitamin D and colorectal cancer risk were not associated, potential effect modification between calcium and vitamin D on the risk of colorectal cancer was indicated.

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