

Dairy Consumption and Colon Cancer: Evidence for a Protective Effect

Cancer of the colon and rectum is the second leading cause of cancer death in the United States, taking about 55,170 lives annually. Both genetic and environmental factors, including diet and activity, are known to play a role in the development and etiology of these cancers. It is well documented that eating a low-fiber, high-fat diet and drinking alcohol increases the risk of developing colon cancer. Conversely, consuming diets high in fruits, vegetables and whole grains and limiting high-fat foods can help prevent it. A growing body of research also suggests that a diet high in low-fat dairy products may decrease the risk.

Summary of Studies

- In a clinical study of 70 men and women, increasing intake of low-fat dairy products to reach 1500 mg of calcium per day (equivalent to 4-5 cups of milk per day) for one year resulted in positive changes in biomarkers of colon cancer, such as a reduction in the growth of abnormal cells. Increased dairy food intake may also have returned some precancerous colon cells to their normal state.¹
- Another clinical study in 40 subjects at risk for colonic neoplasia showed that increased dietary calcium—given as supplements or low-fat dairy foods—lowers epithelial cell proliferation indices from a higher- to a lower-risk pattern and may be effective in reducing risk of colon cancer.²
- A recent study in Japanese men found a dietary pattern including greater consumption of dairy products, fruits and vegetables and minimal alcohol was associated with a decreased risk of colorectal adenomas.³
- Various case-control and cohort studies have found consumption of milk, dairy products and/or calcium were inversely related to colon cancer incidence.^{4,5}
- Animal studies report a protective role for calcium and/or vitamin D against colon cancer, and have shed some light on potential mechanisms for this effect (see below).^{6,7}
- Vitamin D consumption has also been associated with a slightly reduced risk for colon cancer.⁸
- Most studies suggest a level of 1200-1500 mg of calcium per day, or about 4 servings of dairy foods, is needed to confer this protective effect.

Mechanism of the Protective Effect

It is not clear what component(s) in dairy foods confer a protective effect against colon cancer. Numerous animal studies have shown a protective effect of calcium against colonic carcinogenesis.⁹

Calcium binds free bile acids and fatty acids into insoluble complexes, possibly reducing their ability to damage colonic epithelial cells.¹⁰ Calcium may also directly inhibit cancer cells from dividing, thus ensuring normal growth and differentiation of colon cells. Dairy foods exert stronger anti-cancer effects on colon cancer than calcium supplements, however, indicating that dairy products contain other factor(s) that also act in a protective manner. Other components in dairy that may play a protective role include vitamins A and D, butyric acid, sphingolipids, protein, probiotic bacteria and conjugated linoleic acid (CLA).

Consumption of Whole Foods is the Best Protection

Most studies reinforce the evidence that a well balanced diet consisting of whole foods can reduce the risk of certain diseases. Fruits and vegetables have long been known to protect against heart disease and certain types of cancer. Dairy products are recognized as important in preventing osteoporosis, hypertension and now colon cancer.

Because people are often unaware that they have these diseases until clinical manifestations occur, prevention is by far the best “cure.” *It is important for patients to realize that the amount of dairy products needed to provide beneficial effects is attainable from the diet, and in fact is only slightly higher than the national guidelines recommend.*

Peter Holt, M.D., professor of medicine at Columbia University and one of the lead investigators in colon cancer research, summarizes: “Increasing consumption of dairy foods, which has long been recommended to prevent osteoporosis and other serious diseases, should also be considered as a preventive measure for those at risk of colon cancer.”¹

References

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