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Yogurt: Prophylaxis for Colorectal Cancer?

— Large observational studies show fewer polyps in frequent consumers -- but only for men

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In the ongoing quest to identify risk modifiers for colorectal adenomas and cancer, a new study has found that men who consumed at least two weekly servings of yogurt had lower rates of conventional and especially serrated polyps compared with those who consumed no yogurt.

Men's risk reduction for conventional polyps was 19%, and 26% for polyps with higher malignant potential, reported Yin Cao, ScD, MPH, of Washington University School of Medicine in St. Louis, and colleagues in *Gut*.

The association was independent of calcium and non-yogurt dairy intake; the reduction was stronger for colon polyps than rectal polyps, at 18% versus 5%.

No associations between yogurt consumption and polyp incidence were found in women, however.

Cao and colleagues suggested that yogurt may reduce adenoma risk through anti-inflammatory effects on the colonic mucosa and mitigation of gut barrier dysfunction.

"As male patients with adenoma present with increased gut permeability, yogurt may benefit men more compared with women," they wrote. The inverse association

Previous research has also reported that higher yogurt intake may reduce the risk of colorectal cancer, working potentially through the gut microbiome. In 2011, an Italian study similarly noted a more protective effect of yogurt consumption in men than in women.

Although yogurt has been recommended by the Dietary Guidelines for Americans as part of fat-free and low-fat dairy intake, it isn't especially popular with U.S. consumers.

Waqar Qureshi, MD, of Baylor College of Medicine in Houston, cautioned that the analysis did not really establish a link between yogurt consumption and polyp prevention. "It's just possible that men who ate a lot of yogurt also had a very healthy lifestyle that avoided established risk factors for colon cancer," said Qureshi, who played no role in this research.

He told *MedPage Today* that individuals' overall diet overrides everything else. "There's no question that yogurt, especially fat-free or low-fat, is a healthy food and good for you, but unless you stop eating steaks several times week, no amount of yogurt is going to help you."

Qureshi also noted that no study has shown that yogurt has any effect on the microbiome that would prevent polyps or colon cancer.

Study details

Cao and colleagues evaluated the yogurt/polyp association with data on 32,606 men from the Health Professionals Follow-up Study and 55,743 women from the Nurses' Health Study who underwent lower GI endoscopy in the period 1986 to 2012. Participants provided detailed information on demographics, lifestyle, and diet, including yogurt consumption, every 4 years.

The findings were adjusted for multiple variables such as age, time period of endoscopy, number of endoscopies, time since most recent endoscopy and reason for current endoscopy. Some were additionally adjusted for height, body mass index, family history of CRC, diabetes, pack-years of smoking, alcohol intake, physical activity, and regular aspirin and NSAID use. Adjustments also made for intakes of total vitamin D, non-yogurt dairy, total calories, red and processed meat, dietary fiber, folate, total calcium intake, menopausal status, and menopausal

In men who consumed ≥2 servings per week versus none, the odds ratio for conventional adenoma was 0.81 (95% CI 0.70-0.94, *P*=0.01 for trend). This association was more pronounced for adenomas with high malignant potential: OR 0.74 (95% CI 0.59-0.92, *P*=0.01 for trend) than those with low risk (OR 0.90, not significant).

Interestingly, an inverse association was seen for colon adenomas (OR 0.82, 95% CI 0.70-0.95, *P*=0.01 for trend) but not rectal adenomas. That may have been partly due to the colon's lower pH, which provides a more hospitable environment for probiotics, the researchers noted.

No apparent association emerged in men for the higher-risk serrated type, but a trend toward inverse association for larger lesions of ≥1 cm was observed (OR 0.48, 95% CI 0.25-0.95, *P*=0.04 for trend).

The authors surmised that yogurt may help prevent the development of cancer precursors through both the adenoma-to-carcinoma sequence and the serrated pathway. "Products of the two common probiotics used in yogurt, *Lactobacillus bulgaricus* and *Streptococcus thermophilus*, may reduce levels of carcinogens such as nitroreductase, faecal activated bacterial enzymes and soluble faecal bile acids," they wrote.

Against that interpretation, though, a recent study found no significant changes in gut microbial community composition and diversity during yogurt consumption. Regular monitoring, however, indicated that yogurt intake appeared to have some effect on Lactobacilli, and high-dose yogurt slightly increased microbial diversity in some individuals.

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Qureshi reported having no conflicts of interest relevant to his comments.

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