

Low/no calorie soft drinks linked to improved outcomes in advanced colon cancer patients

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Drinking artificially-sweetened beverages is associated with a significantly lower risk of colon cancer recurrence and cancer death, a team of investigators led by a Yale Cancer Center scientist has found. The study was published today in the journal *PLOS ONE*.

"Artificially sweetened drinks have a checkered reputation in the public because of purported health risks that have never really been documented," said the study's senior author, Charles S. Fuchs, MD, MPH, director of Yale Cancer Center. "Our study clearly shows they help avoid cancer recurrence and death in [patients](#) who have been treated for advanced colon cancer and that is an exciting finding,"

Fuchs and his team of researchers found that in the 1,018-patient analysis, those participants who drank one or more 12-ounce serving of artificially sweetened beverages per day experienced a 46 percent improvement in risk of cancer recurrence or death, compared to those who didn't drink these beverages. These were "soft drinks," defined as caffeinated colas, caffeine-free colas, and other carbonated beverages (such as diet ginger ale).

A second analysis found that about half that benefit was due to substituting an artificially sweetened beverage for a beverage sweetened with sugar.

"A growing body of literature suggests that poor dietary habits, such as high consumption of sugar-sweetened beverages, may increase risk of colon cancer recurrence and patient mortality," said the study's first author, Brendan J. Guercio, MD, a medical resident at Dana-Farber Cancer Institute when the research was conducted, but now a hospitalist at Brigham and Women's Hospital. "For colon cancer patients who have trouble abstaining from sweet beverages, choosing artificially sweetened options over sugar-sweetened beverages may allow them to avoid those health ramifications."

"While the association between lower colon cancer recurrence and death was somewhat stronger than we suspected, the finding fits in with all that we know about colon cancer risk in general," Fuchs said. "Factors such as obesity, sedentary lifestyle, a diet linked to diabetes—all of which lead to an excess energy balance—are known risk factors. We now find that, in terms of colon cancer recurrence and survival, use of artificially sweetened drinks is not a health risk, but is, in this study, a healthier choice."

This research follows on the heels of a number of publications of studies that prospectively followed stage III colon cancer patients enrolled in a National Cancer Institute-supported clinical trial testing two different forms of postsurgical chemotherapy. Participants completed comprehensive nutrition questionnaires probing consumption of more than 130 different foods and drinks over the span of many months. One questionnaire was given as patients underwent chemotherapy between 1999 and 2001, and then was given again six months after chemotherapy ended. Investigators then tracked cancer recurrence and patient death rates for about seven years, and found, among other things, that the two chemotherapy regimens offered equitable benefits.

The studies, which were embedded as part of the overall clinical trial, were designed to find associations between specific foods/drinks and colon cancer risk and death. They were not aiming to prove definitive cause and effects.

One study found that clinical trial participants who drank coffee had a substantially reduced risk of cancer recurrence and death. Another found a similar benefit in patients who ate tree nuts. This study looked at artificially sweetened beverages because an earlier study concluded sweetened beverages dramatically increased risk of [colon cancer](#) development.

"We wanted to ask the question if, after cancer has developed and advanced, would a change in lifestyle—drinking artificially sweetened beverages—change outcome of the cancer post-surgery?" Fuchs said.

He added that the health impact of such soft drinks should be studied.

"Concerns that artificial sweeteners may increase the incidence of obesity, diabetes, and cancer have been raised, but studies on issues such as weight gain and diabetes have been very mixed, and, regarding cancer, epidemiologic studies in humans have not demonstrated such relationships."

- Increasing artificially sweetened beverage intake was associated with significantly lower risk of cancer recurrence or death after adjusting for other predictors of [cancer recurrence](#).
- These associations persisted after adjusting for potential cofounders, including measures of energy balance, such as body mass index, physical activity, and consumption of a prediabetic "Western" diet—all known and suspected predictors of patient outcome.
- The median follow-up from the first questionnaire was 7.3 years. During this time, 348 of the 1,018 patients experienced colon [cancer recurrence](#) or new primary tumors; 265 of these patients died.

Provided by Yale University

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