

## Vegetarian Diet Linked to Reduced Colorectal Cancer Risk

Fran Lowry | March 09, 2015

Vegetarians appear to be at lower risk for colorectal cancer than nonvegetarians, new research shows.

In a large observational cohort study of Seventh-Day Adventists, those who consumed a vegetarian diet had a 22% lower risk for all colorectal cancers than those who ate meat.

The study was published online March 9 in *JAMA Internal Medicine*.

Interestingly, the risk of developing colorectal cancer was much lower in pescovegetarians (who ate no meat but who ate fish more than once a month) than other categories of nonvegetarians. The relative reduction in risk was 43%, said lead author Michael J. Orlich, MD, PhD, from Loma Linda University in California.

"We weren't expecting the pescovegetarians to show the lowest risk," Dr Orlich told *Medscape Medical News*. "But the finding for pescovegetarians, compared with nonvegetarians, was highly statistically significant, so this is very unlikely to be due to chance."

The study is a sequel to previous studies of Seventh-Day Adventists, which have shown certain health advantages for that group, compared with the general population in the United States, including greater longevity and reduced risk for diseases, Dr Orlich said.

"This population has a much higher rate of vegetarianism than the general population, so it's a good group to study vegetarian diets, low meat consumption, and increased consumption of a variety of plant foods, and the impact these factors may have on cancer risk," he said.

"It's worth pointing out that our nonvegetarians are still a relatively low meat-consuming group. They average about 2 ounces of meat a day, so we are comparing vegetarians with a pretty low meat-consuming group, and a relatively healthy group overall. In fact, after we adjusted for age, race, and sex, in comparison with the overall American population, the rate of colorectal cancer was 0.73 for the nonvegetarians, so they already had 27% fewer cases of colorectal cancer than you would expect for an age-, sex-, and race-matched population in the United States. If we were to compare our vegetarians with a more average population, the effects might even look stronger," Dr Orlich noted.

The Church of Seventh-Day Adventists recommends vegetarianism, expects adherence to kosher laws (abstinence from shellfish, pork, and some other meats), and discourages its members from consuming alcoholic beverages, tobacco, and illegal drugs. Some Adventists also avoid coffee, tea, cola, and other beverages containing caffeine.

### Food-Frequency Questionnaire Used

More than 96,000 Seventh-Day Adventist men and women were enrolled in the Adventists Health Study-2 — a prospective cohort trial — from January 2002 to December 2007.

Dr Orlich and his team analyzed 77,659 Adventists from June to October 2014 to look for an association between vegetarian dietary patterns and risk for colorectal cancers.

A food-frequency questionnaire was used to assess diet at baseline. Along with a nonvegetarian diet, four categories of vegetarian diets were identified: vegan (no meats, dairy products, or eggs); lacto-ovo vegetarian (no



Dr Michael Orlich

meats, but dairy products and eggs); pescovegetarian; and semi-vegetarians (meats more than once a month but less than once a week).

Incident cases of cancers of the colon and rectum were identified from state cancer registry linkages.

Vegetarians tended to be older than nonvegetarians, and more likely to have higher education levels, to exercise, and to use calcium supplements. And vegetarians were less likely to have ever smoked, to drink alcohol, to have had a colonoscopy or sigmoidoscopy, to use aspirin or statins, to have been treated for diabetes in the previous year, and to have a history of peptic ulcers.

Vegetarians were also leaner, with a lower body mass index and less intake of total fat, saturated fat, and all meats, including red meat and processed meat, but a more intake of fiber.

During a mean follow-up of 7.3 years, 380 cases of colon cancer and 110 cases of rectal cancer were documented.

Vegetarian diets were associated with a lower overall risk for colorectal cancer, a 19% lower risk for colon cancer, and a 29% lower risk for rectal cancer.

**Table. Colorectal Cancer by Category of Vegetarian**

Category	Hazard Ratio	95% Confidence Interval
Vegan	0.84	0.59–1.19
Lacto-ovo	0.82	0.65–1.02
Pescovegetarian	0.57	0.40–0.82
Semi-vegetarian	0.92	0.62–1.37

### A Well-Designed Study

"This study adds novel evidence of a pescovegetarian, or fish-rich diet, a specific pattern of vegetarians, in lowering the risk of colorectal cancer to the already quite established red meat–colorectal cancer connection," said Ting-Yuan David Cheng, PhD, from the Roswell Park Cancer Institute in Buffalo, New York.

"In addition to the many advantages of a well-designed cohort study, the study population was relatively homogeneous, which might have reduced the influence of other risk factors on the findings," Dr Cheng told *Medscape Medical News*.

"The data also suggest, although this is not explicitly noted by the authors, that people may need to stick fast to the dietary pattern for 2 decades in order to start to see the benefit of preventing colorectal cancer in their 60s or even their 70s," he added.

*The study was funded by the National Cancer Institute and the World Cancer Research Fund. Dr Orlich and Dr Cheng have disclosed no relevant financial relationships.*

*JAMA Intern Med.* Published online March 9, 2015. Abstract

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Cite this article: Vegetarian Diet Linked to Reduced Colorectal Cancer Risk. *Medscape*. Mar 09, 2015.