

# Adherence to healthy diets associated with lower cancer risk

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A diet that encourages both healthy eating and physical activity and discourages alcohol consumption was associated with a reduced overall cancer risk, as well as lower breast, prostate, and colorectal cancer risks.

The study is published in *Cancer Research*, a journal of the American Association for Cancer Research, by Mathilde Touvier, MSc, MPH, Ph.D., head of the Nutritional Epidemiology Research Team (EREN) of the French National Institute of Health and Medical Research (Inserm), University of Paris 13, and Bernard Srour, PharmD, MPH, and Ph.D. candidate in nutritional epidemiology at EREN-Inserm.

"Among all risk factors for [cancer](#) (besides tobacco), nutrition and physical activity are modifiable lifestyle factors which can contribute to cancer risk," said Touvier.

"The World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) estimated that in developed countries, around 35 percent of breast cancers and 45 percent of

colorectal cancers could be avoided by better adherence to nutritional recommendations. It is, therefore, very important to investigate the role of nutrition in cancer prevention," added Srour.

In order to encourage [healthy eating](#), many organizations have issued dietary recommendations, and this study evaluated three previously validated nutritional recommendations: [The WCRF/AICR score](#); the [Alternate Healthy Eating Index](#); and the [French Nutrition and Health Program-Guidelines Score](#), plus one relatively new index, the [MEDI-LITE score](#), which measures adherence to a Mediterranean diet. Researchers found that all the diets were associated with some reduced risk, but the WCRF/AICR recommendations, developed specifically with cancer prevention in mind, had the strongest association with reduced risk.

In order to examine links between the four nutritional indices and cancer risk, Srour, Touvier, and colleagues drew data from the NutriNet-Santé study, launched in 2009 to investigate associations between nutrition and health in a French cohort. This study included a large sample of 41,543 participants aged 40 or older, who had never been diagnosed with cancer prior to inclusion in the study. The participants completed web-based dietary records every six months, in which they detailed all foods and beverages consumed during a 24-hour period. The researchers then calculated their adherence to each of the four nutritional scores in the study.

Between May 2009 and Jan. 1, 2017, 1,489 cancer cases were diagnosed in the study participants, including 488 breast cancers, 222 prostate cancers, and 118 [colorectal cancers](#). The researchers used multivariable Cox proportional hazard models to characterize the associations between each nutritional score and cancer risk.

The study showed that a one-point increase in the

WCRF/AICR score was associated with a 12 percent decrease in overall cancer risk; a 14 percent decrease in [breast cancer](#) risk, and a 12 percent decrease in [prostate cancer risk](#).

Adherence to the other diets was also associated with reduced cancer risk, but the WCRF/AICR index demonstrated greater statistical strength and a better predictive performance, Srour and Touvier said. For that reason, and because the other three diets were not specifically designed for cancer prevention, the researchers conducted further analysis on the WCRF/AICR scores, excluding certain components to evaluate the relative importance of each one.

The researchers concluded that the "synergistic contribution" of a healthy diet was more significant than any single dietary recommendation. For example, antioxidants from fruits and vegetables may contribute to counteract some of the oxidative damage to the DNA caused by red meat and processed meat, and exercise could lower blood pressure, partly counteracting the effects of high-sodium foods.

"This emphasizes the role of an overall healthy lifestyle—nutrition and [physical activity](#) and alcohol avoidance—in cancer prevention," Srour said. "It is, therefore, important to keep in mind that every lifestyle factor counts and it is never too late to adopt a healthy lifestyle."

Srour and Touvier said the WCRF/AICR recommendation to avoid alcohol most likely contributed to that diet's role in reducing [cancer risk](#). They said the findings in this study augment recent research that implicates alcohol as a risk factor in many cancers.

"In its last report, the WCRF stated that there is now strong, convincing evidence that alcohol consumption increases the risks of oropharyngeal, esophagus, liver, colorectal, and post-menopausal breast cancers," Touvier said, adding that there are also apparent links to stomach and premenopausal breast cancers.

Because it is based on volunteer participation, this study may have overrepresented women, people

with health-conscious behaviors, and those with higher socioeconomic and educational levels. As a result, some unhealthy behaviors may have been underrepresented, and the associations between healthy diets and [cancer prevention](#) may be stronger than indicated.

Because previous research has shown that the French consume more fruits and vegetables and fewer sugary beverages and processed foods than the American population, the authors said adhering to the WCRF/AICR recommendations would likely yield more dramatic results in an American population.

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