

Poor adolescent, early adult diet associated with increased risk for premenopausal breast cancer

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Women who consumed a diet as adolescents or young adults associated with chronic inflammation had a higher risk for premenopausal breast cancer compared with those whose adolescent and early adulthood diet was not associated with chronic inflammation

The study is published in *Cancer Epidemiology, Biomarkers & Prevention*, a journal of the American Association for Cancer Research, by Karin B. Michels, ScD, PhD, professor and chair of the Department of Epidemiology at the UCLA Fielding School of Public Health, Los Angeles.

A diet low in vegetables and high in sugar-sweetened and diet soft drinks, refined sugars and carbohydrates, red and processed meats, and margarine has been linked to high levels of [inflammatory markers](#) in the blood, according to Michels.

"Because breast cancer takes many years to arise, we were curious whether such a diet during the early phases of a woman's life is a risk factor for breast cancer," she said.

For this study, Michels and colleagues used data from 45,204 women enrolled in the Nurses' Health Study II who had completed a food frequency questionnaire in 1998, when they were ages 33-52, about their diet during high school. Adult diet was assessed first using a food

frequency questionnaire in 1991, when participants were ages 27-44, and then every four years after that. Each woman's diet was given an inflammatory score using a method previously developed that links diet with inflammatory markers in the blood.

During 22 years of follow-up, 870 of the women who completed the high school food frequency questionnaire were diagnosed with premenopausal breast cancer and 490 were diagnosed with postmenopausal breast cancer.

When women were divided into five groups based on the inflammatory score of their adolescent diet, those in the highest score group had a 35 percent higher risk for premenopausal breast cancer relative to those in the lowest score group. When the same analysis was done based on [early adulthood](#) diet, those in the highest inflammatory score group had a 41 percent higher risk for premenopausal breast cancer relative to those in the lowest score group.

Diet inflammatory score was not associated with overall breast cancer incidence or postmenopausal breast cancer.

"Our results suggest that a habitual diet that promotes chronic inflammation when consumed during adolescence or early adulthood may indeed increase the risk of breast cancer in younger women before menopause," said Michels.

"About 12 percent of women in the United States develop breast cancer in their lifetimes," she added. "However, each woman's [breast cancer](#) risk is different based on numerous factors, including genetic predisposition, demographics, and lifestyle. Our study suggests that a habitual adolescent/early adulthood diet that promotes [chronic inflammation](#) may be another factor that impacts an individual woman's risk.

"During adolescence and early adulthood, when the mammary gland is rapidly developing and is therefore particularly susceptible to lifestyle factors, it is important to consume a diet rich in vegetables, fruit, whole grains, nuts, seeds, and legumes and to avoid soda consumption and a high intake of sugar, refined carbohydrates, and red and processed meats," Michels noted.

According to Michels, it is important to note that although this is an association study, it is not feasible to perform a causal study because that would require randomizing individuals to a particular diet for a long period of time and following them for decades. She also explained that the main limitations of the current study are that [diet](#) during adolescence was recalled by the participants at a later date and that the researchers did not have adolescent or early adulthood measurements of blood markers of inflammation in this study.

Provided by American Association for Cancer Research

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