

## Increasing Vegetables and Fruits Beyond Current National Guidelines Not Necessary for Breast Cancer Survivors

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Eating a diet very high in vegetables, fruit and fiber and low in fat did not reduce breast cancer recurrence or death in early stage breast cancer survivors, according to a new study. Researchers from the Rebecca and John Moores Cancer Center at the University of California, San Diego found that this intensive diet provided no additional benefit to following the generally recommended dietary guidelines.

The study is published in the July 18 issue of the *Journal of the American Medical Association*.

The results are from the multi-center Women's Healthy Eating and Living (WHEL) Study, based at UC San Diego, the largest randomized clinical trial to assess the influence of diet on additional breast cancer events. Participating institutions included the University of California, Davis; Stanford University; Kaiser Permanente in Oakland and Portland; University of Arizona at Tucson, and the University of Texas M.D. Anderson Cancer Center in Houston.

"This is a definitive study," said principal investigator John Pierce, Ph.D., director of the University's Cancer Prevention and Control Program. "The WHEL Study provides strong evidence that, for the typical woman diagnosed with early stage breast cancer, there is no additional health benefit over 7 years from dramatically increasing the diet's amount of nutrient-rich plant-based foods, compared to following the recommended healthy diet."

The study followed 3,088 breast cancer survivors, aged 18 to 70, for between 6 and 11 years. Participants were randomly assigned to one of two diet groups. The comparison group followed the guidelines promoted by the U.S. Department of Agriculture (USDA). The intensive intervention group was asked to follow a daily dietary pattern that included 5 vegetable servings, 16 ounces of vegetable juice, 3 fruit servings, 30 grams of fiber, and 15-20% from fat.

At the start of the study, both groups consumed similar amounts of vegetables and fruits (7 servings a day on average), fiber, and calories from fat. Telephone counseling helped women assigned to the intensive dietary group to change their diets substantially: at the end of the first year of observation, women in the intervention group had increased their average vegetable and fruit intake by 5 servings per day (to an average of 12 servings per day). They also increased their fiber intake substantially and decreased fat intake. These large changes in self-reported dietary pattern were validated by large changes in plasma carotenoid concentrations. By the fourth year of the trial, relative to the comparison group, the intensive dietary group was still consuming more vegetable servings (+65%), more fruit servings (+25%), more fiber (+30%), and less fat (-13%). The difference in diets between the two groups was maintained throughout the trial.

"The dietary changes achieved and maintained by the women in the intervention group resulted in some of the biggest differences in dietary pattern ever reported in a large randomized clinical trial," said Vicky Newman, M.S., R.D., Director of Nutrition Services for the Cancer Prevention Program at the Moores UCSD Cancer Center. "It provides further evidence of the effectiveness of telephone counseling in helping people to change behaviors."

After a median of 7 years of follow-up, the study observed no difference in recurrence or survival between groups: about 17% of women in both diet groups developed a breast cancer recurrence or new breast cancer, and 10 % of women in both groups died.

"These results do not mean that women should stop paying attention to what they eat," said study investigator Bette Caan, Dr.P.H., senior epidemiologist at the Kaiser Permanente Division of Research in Oakland, California. "In addition to exercising regularly, eating a diet that has plenty of fruits and vegetables and is moderate in fat is still one of the best ways we know to maintain health."

"We want to keep in mind that this study relates only to breast cancer survivors," said co-investigator Cheryl Rock, Ph.D., R.D., of the Moores UCSD Cancer Prevention and Control Program. "We recognize that several other very well-designed, controlled studies have shown clearly that eating more than five fruits and vegetables a day can make major differences in disease risk, such as in lowering blood pressure and reducing risk of stroke and heart disease."

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