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Diet may cut risk of breast cancer recurrence in women without hot flashes

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A secondary analysis of a large, multicenter clinical trial has shown that a diet loaded with fruits, vegetables and fiber and somewhat lower in fat compared to standard federal dietary recommendations cuts the risk of recurrence in a subgroup of early-stage breast cancer survivors – women who didn't have hot flashes – by approximately 31 percent. These patients typically have higher recurrence and lower survival rates than breast cancer patients who have hot flashes. The study team, led by researchers at the Moores Cancer Center at the University of California, San Diego, along with six other sites, including the University of California, Davis, reported its results online December 15, 2008, in the *Journal of Clinical Oncology*.

The results come on the heels of a report last year on the findings of the original study, the Women's Healthy Eating and Living Trial (WHEL), which compared the effects of the two diets on cancer recurrence in more than 3,000 early-stage breast cancer survivors. That study showed no overall difference in recurrence among the two diet groups.

"Women with early stage breast cancer who have hot flashes have better survival and lower recurrence rates than women who don't have hot flashes," said Ellen B. Gold, Ph.D., professor and chair of the UC Davis Department of Public Health Sciences and first author of the study. "Our results suggest that a major change in diet may help overcome the difference in prognosis between women with and without hot flashes."

"Our interest in looking at this subgroup came because hot flashes are

associated with lower circulating estrogen levels, while the absence of hot flashes is associated with higher estrogen levels. Reducing the effect of estrogen is a major treatment strategy in breast cancer," said the WHEL study principal investigator John P. Pierce, Ph.D., Sam M. Walton Professor for Cancer Prevention and director of Cancer Prevention and Control at the UC San Diego School of Medicine and the Moores UCSD Cancer Center. "It appears that a dietary pattern high in fruits, vegetables and fiber, which has been shown to reduce circulating estrogen levels, may only be important among women with circulating estrogen levels above a certain threshold."

About 30 percent of the original group of 3,088 breast cancer survivors did not report hot flashes at study entry. The women had been randomly assigned to one of the two diets between 1995 and 2000 and were followed until 2006. About one-half (447) of the "no hot flashes" group were randomized to the special, "intervention" high-vegetable fruit diet while the other half (453) was given the generally recommended diet of five servings of fruits and vegetables a day. The team found that those on the intervention diet had a significantly lower rate of a second breast cancer event (16.1 percent) compared to those eating the government-recommended five-a-day dietary pattern (23.6 percent).

The dietary effect was even larger (a 47 percent lower risk) in women who had been through menopause.

According to Pierce, another possible mechanism has been proposed recently for why this diet may have affected only 30 percent of the WHEL study population. Women with estrogen receptor-positive cancers usually receive hormone therapy (tamoxifen or aromatase inhibitors) aimed at combating the effect of circulating estrogen. However, more than 30 percent of these women appear to have a gene-drug interaction that prevents them from getting an effective dose of this therapy.

"This hypothesis says that if the endocrine therapy is working, no further reduction in estrogen levels would be needed," said Pierce. "If your genes are preventing you from getting a therapeutic dose, then following this rigorous dietary pattern may reduce estrogen levels enough to reduce risk." Because this is speculation, he said, the research team will be using biological samples collected throughout the study to further investigate the mechanisms behind the study diet's protective effects.

Source: University of California - Davis