Cancer and Beyond: Healthy Lifestyle Choices for Cancer Survivors

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Since the American Cancer Society (ACS) first published its Nutrition and Physical Activity Guidelines for Cancer survivors in 2006 (1), much research has explored the potential benefits of lifestyle choices among cancer survivors. In 2012, ACS published an update (2), and other organizations have now developed guidelines for cancer survivors (3). The unifying message is that lifestyle has a major influence for cancer survivors, just as it is essential for cancer prevention (4). The key dietary recommendations across these reports are: 1) choose fruits and vegetables; 2) choose whole grains over refined grains; 3) choose fish and poultry over red and processed meats; 4) choose unsaturated fats, such as olive oil, over saturated and trans-fats; and 5) choose low-fat over full-fat dairy. In addition, recommendations call for the maintenance of a healthy body weight, regular physical activity, and cessation of smoking and avoidance of tobacco. Together, these behaviors address the increased risk for other diseases that many cancer survivors also experience.

In this issue of the Journal, Kroenke et al. (5) followed 1893 breast cancer survivors a median of 11.8 years, observing that consumption of more than one serving per day of high-fat dairy increased all-cause, breast cancer-specific and non-breast cancer mortality but was not associated with risk of recurrence. No association was observed for low-fat dairy. Overall dairy consumption was associated with an increased risk of all-cause mortality but was not related to breast cancer–specific outcomes. This study builds on previous literature examining dietary fat, dairy, and breast outcomes, which have had mixed results. In a previous observational study that followed 1982 breast cancer survivors for a mean 13.1 years (6), consumption of two or more servings per day of dairy was associated with a decreased risk of mortality (86% of deaths were due to breast cancer), with a statistically significant trend. That association became non-statistically significant when adjusting for physical activity, leading the authors to speculate that high dairy intake reflects good health and not that high intakes cause it. The study did not separate high- and low-fat dairy. In the same population, a subsequent analysis observed a healthy dietary pattern after breast cancer diagnosis was not associated with overall or breast cancer–specific mortality (7).

Kroenke et al. hypothesize that the effects of dairy on post–breast cancer outcomes are driven primarily by estrogenic hormones, which reside in fat and are thus more prevalent in high-fat than low-fat dairy (5). This would also suggest that diets generally high in fat would be associated with breast cancer outcomes. A high-fat diet was associated with mortality in a previous observational study of breast cancer survivors (8). Two large, randomized trials, Women’s Healthy Eating and Living (WHEL) and Women’s Intervention Nutrition Study (WINS), also observed that a low-fat diet reduced risk of recurrence and mortality in women with breast cancer (9,10). However, the association was strongest for high-fat dairy and non–breast cancer mortality, suggesting the mechanism is something other than estrogen.

Taken together, the evidence among breast cancer survivors supports the importance of a diet that is low in fat, regardless of the fat source. In the current study (5), a strong correlation ($r = .70$; $P < .001$) between high-fat dairy and saturated fat precluded the authors from accounting for total fat intake in their analyses of high-fat dairy. The authors note that their findings are stronger for dairy and breast cancer outcomes than for saturated fat and breast cancer outcomes, but these data are not presented. That no association was found for increasing intake of low-fat dairy and only for increasing intake of high-fat dairy, combined with the existing literature on dietary fat and mortality in breast cancer survivors, however, suggests that fat and not dairy, per se, may be the relevant nutritional factor. Although the authors hypothesize that the dairy effect is driven by estrogens, that the association did not vary across causes of death suggests that other mechanistic pathways are equally important in the association of high-fat dairy (or high-fat diet) and mortality.

The authors’ analytic approach (averaging consumption for women who survived to the second questionnaire instead of updating exposure level as was done for the study covariables) may have blunted any exposure effects. It also precluded the authors from examining whether the timing of exposure might matter. It is well known that exposure timing, particularly for hormone-associated factors, is important in breast cancer risk (11).

The study authors note they were limited in their ability to examine several questions of interest, in part by the low intake of dairy in this population (mean = 1.7 servings per day). The dairy intake, however, is consistent with national estimates for women aged 51 years and older (1.35 servings per day) (12).

The time of the study data collection was one where secular trends reflect decreasing milk consumption (12,13) and the selection of low-fat dairy over high-fat dairy (14). It was also the time when the market share of soy and other plant-based milks was growing rapidly. Thus, it is reasonable to assume that the consumption patterns of the women in the study changed over time. Ultimately, consumption of high-fat dairy is a small part of the diet of the women in this study. A recent review suggests that the benefits of diet and physical activity among survivors may come largely from maintenance of a healthy weight (15). The study size did not allow Kroenke et al. to examine associations in subgroups. Future studies examining dietary associations across body weight categories are thus important. Furthermore, as other studies have highlighted the complex relation between dairy and adverse health outcomes (16), future investigation should continue to distinguish between high- and low-fat dairy in analyses.
of diet and outcomes among survivors. Interestingly, women who consumed the greatest amount of high-fat dairy were more likely to be physically active, less likely to consume alcohol, had higher body mass index, and were more likely to have smoked. This suggests that one component of dietary intake cannot be presumed to represent a broader lifestyle. Examination of interactions among lifestyle choices and dietary patterns would provide novel information. Regardless, health messages for cancer survivors must be comprehensive.

Despite the limitations in the study data and analytic approach, the authors report that consumption of high-fat dairy was associated with elevated risk of all-cause, breast cancer-specific, and non-cancer mortality among breast cancer survivors. Understanding whether the substitution of low-fat dairy for high-fat dairy or use of plant-based dairy substitutes (eg, almond milk and soy cheese) improves outcomes remains important for survivors and researchers alike, particularly given the proliferation of these products in the food market. However, the key message for survivors should remain the importance of lifestyle in their health—limited not just to the consumption of a healthy diet but also to the maintenance of a healthy weight, being physically active, and not smoking.

With the population of cancer survivors, and breast cancer survivors in particular, growing, there is need for clear lifestyle recommendations. The study by Kroenke et al. adds to the robust literature that healthy lifestyle choices matter for improving odds of disease-free survival among cancer survivors. Clinicians and survivors should continue to focus on maintaining a healthy weight, being physically active, avoiding smoking, and choosing a diet comprised of fruits and vegetables, lean protein, whole grains, and low-fat foods, including dairy. As with cancer prevention (17), clinicians can employ shared decision making to prioritize the implementation of lifestyle recommendations by patients.

References


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