GLOSSARY

AJCC

American Joint Committee on Cancer

SURVEILLANCE, EPIDEMIOLOGY, AND END RESULTS PROGRAM (SEER PROGRAM)

A program run by the National Cancer Institute of the National Institutes of Health that periodically reports estimates of cancer incidence and mortality in the US

Fat intake and risk of breast and colorectal cancers

Two papers published in *JAMA* have reported on the association between low-fat dietary intake and risk of breast and colorectal cancers. Both articles contain analyses of data from the Women's Health Initiative Randomized Controlled Dietary Modification Trial.

This trial, conducted at 40 American clinical centers from 1993–2005, enrolled 48,835 postmenopausal women aged 50–79 years at baseline, who had no prior history of breast or colorectal cancer. Forty percent of participants were randomized to dietary intervention; the remaining 60% were not asked to modify their diet but received dietary education materials. Patients were followed for an average of 8.1 years. The dietary modifications in the intervention group did not meet the intended objective, but, as monitored by self-completed questionnaires, this group achieved notably greater average reductions from baseline in percentage of energy from fat than did the non-intervention group (10.7% greater reduction at year 1 and 8.1% greater reduction at year 6). In addition, increases in daily fruit/vegetable and grain intake in the intervention group were significant compared with those in the nonintervention group ($P < 0.05$).

As reported by Prentice *et al.*, 655 (3.4%) participants in the intervention group and 1,072 (3.7%) participants in the nonintervention group developed invasive breast cancer during follow-up; the difference in incidence between these two groups was not statistically significant. The reduction in breast cancer incidence in the intervention group, however, was more marked when only those women who participated fully in the trial were included in the analysis. Further analyses provided evidence of a greater reduction in risk of cancer for those who had a high-fat diet at baseline, and evidence of an influence of tumor hormone-receptor characteristics on dietary effect.

The same trial cohort was assessed by Beresford *et al.* to investigate the association between low-fat dietary pattern intervention and risk of colorectal cancer. During follow-up, 201 participants (0.13%/year) in the intervention group and 279 participants (0.12%/year) in the nonintervention group developed invasive colorectal cancer. There was no evidence that the incidence of colorectal cancer was

reduced by a low-fat diet, for colorectal cancer as a whole or the colorectal cancer subtypes studied. Adjustment for adherence to the trial did not affect these results. Although secondary analyses showed that baseline high-dose aspirin use and use of combined estrogen–progestin were both significantly associated with the effect of intervention in colorectal cancer risk ($P = 0.01$ for both), these findings could have occurred by chance because of the large number of interactions tested.

Changing to a low-fat diet at midlife or late life would therefore seem to have little effect on the risk of either colorectal or invasive breast cancer in postmenopausal women—at least over an 8-year period. Failure to reach the original goals of the trial, however, with only 70% of the desired reduction in fat intake achieved, could have affected the results of both analyses. Longer follow-up, dietary intervention at an earlier age, and identification and targeting of those individuals most likely to benefit from the dietary changes might also achieve statistically significant results.

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Original articles Prentice RL *et al.* (2006) Low-fat dietary pattern and risk of invasive breast cancer: the Women's Health Initiative Randomized Controlled Dietary Modification Trial. *JAMA* 295: 629–642

Beresford SAA *et al.* (2006) Low-fat dietary pattern and risk of colorectal cancer: the Women's Health Initiative Randomized Controlled Dietary Modification Trial. *JAMA* 295: 643–654

Does adjuvant radiotherapy improve survival in all patients with endometrial carcinoma?

Trials have shown inconclusive results regarding the benefit of adjuvant radiotherapy in patients with stage I endometrial carcinoma. Although improved recurrence-free survival has been observed with adjuvant radiotherapy in some patients, certain patient subgroups have poorer outcomes and higher rates of relapse. Lee *et al.* have investigated the effect of adjuvant radiotherapy on overall and relative survival in a large number of patients with various stages and grades of disease.

This study included 21,249 women with AJCC stage IA–C endometrial adenocarcinoma who had undergone total abdominal hysterectomy and bilateral salpingo-oophorectomy, identified from data obtained as part of the (SEER PROGRAM). In total, 4,080 women (19.2%)