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CANCER EPIDEMIOLOGY, BIOMARKERS & PREVENTION

Research Article

Association of a Healthy Lifestyle Index with Risk of Breast Cancer among Women with Normal Body Mass Index in the UK Biobank

Rita Peila, Rhonda S. Arthur, Andrew J. Dannenberg, and Thomas E. Rohan

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Abstract

Background: A high healthy lifestyle index (HLI), a composite score based on good diet quality, low alcohol consumption, no smoking, moderate to high physical activity, and waist circumference <80 cm, has been consistently associated with a reduced risk of breast cancer. Recently, high levels of body fat were found to be associated with an elevated risk of breast cancer in postmenopausal women with a normal body mass index (BMI; 18.5–<25 kg/m^2). Whether the HLI is associated with breast cancer risk in women with normal BMI is unknown.

Methods: We studied 102,572 women aged 40 to 69 years with a normal BMI at enrollment into the UK cohort study. The HLI was created by assigning to each component higher scores for healthier behaviors and then summing the scores. The HLI was categorized by tertiles and age- and multivariable-adjusted HRs for the association of the HLI with breast cancer risk by menopausal status were estimated using Cox proportional hazards models.

Results: In postmenopausal women, compared with a low HLI, higher scores were associated with a reduced risk of breast cancer [$HR_{HLI-3rd\ tertile}$ = 0.76; 95% confidence interval (CI), 0.64–0.91]. Findings were similar for premenopausal women, although they did not reach statistical significance, except when smoking status was excluded from the HLI score ($HLI_{without\ smoking}$: $HR_{3rd\ tertile}$ = 0.71; 95% CI, 0.56–0.90).

Conclusions: In normal BMI postmenopausal women, a high HLI score was associated with a reduced risk of breast cancer.

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