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Response

Reply to Flegal

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We thank Dr Flegal for her interest in our recent study. We understand her concerns about self-reported anthropometric data and acknowledge the limitation that weight was not measured in all 10 cohorts, as we noted in the Discussion section of the article. Reassuringly, validation studies have shown that the absolute difference between reported and measured weight is relatively small. In the anthropometric validation study from the Million Women Study cohort, Wright et al. (1) documented a mean (SD) reported weight of 68.4 (11.9) kg and measured weight of 69.8 (12.6) kg among 40 000 women with both measures at the same time point. The calculated regression dilution ratio for weight in that study was 1.02, and the authors concluded that "reporting errors are likely to generate very little bias in estimates of associations with disease outcomes" (1). In her letter, Dr Flegal points out a small but statistically significant difference in the hazard ratios for self-reported and measured data from one subset of studies in the Global BMI Mortality Collaboration Cohort (2). However, the difference in the results obtained using self-reported and measured body mass index when all 239 studies were included was not statistically significant. Furthermore, the same conclusions were drawn regardless of whether the weight was self-reported or measured, a modest increased risk of death for overweight and a greater risk for obesity.

In reference to Dr Flegal's concern about our categorical variable, we also conducted a spline regression analysis of sustained weight change as a continuous variable (analysis restricted to participants with sustained weight loss, sustained weight gain, or stable weight). Using stepwise selection, none of the spline variables remained in the model, providing further evidence of a linear dose response with increasing amounts of sustained weight loss.

Most important, in a sensitivity analysis stratifying our main analysis on anthropometric ascertainment method, we observed a similar inverse association in both groups (Supplementary Table 8 in the original article). In fact, the hazard ratios were stronger in the measured compared with self-report group. The confidence intervals were also a bit wider, as would be expected based on the relative sample size of the two groups. Our results were robust in every sensitivity analysis; regardless of the method of weight ascertainment, sustained weight loss in women aged 50 years and older was inversely associated with breast cancer risk in a dose-related fashion. These results, taken together with the other scientific evidence documenting the relationships between weight change and sex steroid hormone levels and between hormone levels and risk of breast cancer, are encouraging for breast cancer prevention (3–6).

Notes

We declare no competing interests. Lauren R. Teras, Alpa V. Patel, and Stephanie A. Smith-Warner for the Pooling Project of Prospective Studies of Diet and Cancer (lteras@cancer.org).

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