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RE: Deficit Accumulation Frailty Trajectories of Older Breast Cancer Survivors and Non-Cancer Controls: The Thinking and Living With Cancer Study

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We agree with Mandelblatt et al. (1) that cancer and its associated treatment may be drivers of aging. This paradigm of accelerated aging due to cancer (treatment) was introduced in pediatrics and recently expanded to the geriatric setting (2). However, the data presented by Mandelblatt et al. (1) provide no or only very weak support for this paradigm. Rather, the data suggest that aging in survivors is similar to that in non-cancer controls.

Mandelblatt et al. (1) found that the average longitudinal deficit accumulation score (ie, the index of aging that was used) was higher in breast cancer survivors than in controls at 36 months. However, the deficit accumulation score was already higher at baseline before start of systemic therapy [see Figure 2 in (1)]. The figure shows that this difference remained fairly stable over the 36-month follow-up. A more appropriate analytic technique would have been to evaluate the change in deficit accumulation score over time. Visual inspection of the figure indicates a similar rate of aging rather than accelerated aging in survivors.

In exploring heterogeneity, Mandelblatt et al. identified 3 deficit accumulation trajectory groups among breast cancer survivors: women who remained robust, who remained pre-frail, or who became frailer (1). Exactly the same trajectory groups were identified among controls, as acknowledged by the authors. Also, the frequency distribution of survivors and controls over the trajectory groups was rather similar. In our opinion, these findings are indicative of similarities between breast cancer survivors and controls in terms of aging rather than differences.

Breast cancer survivors who became frailer tended to be younger, have a higher baseline rate of sleep disturbances, and better baseline self-reported cognition compared with controls (1). These were the only statistically significant differences, and the direction of the differences was not consistent (younger age and better cognition vs higher rate of sleep disturbances). Again, these findings are not indicative of cancer (treatment)-related aging.

Mandelblatt et al. (1) reported on the impact of deficit accumulation group on cognition and physical activity. We feel that—in the absence of meaningful differences between breast cancer survivors and controls in deficit accumulation—it is hard to interpret these outcome patterns. Instead, we would encourage the authors to carefully explore temporal changes in the various items of the deficit accumulation score (eg, functional status): we expect that this could lead to a better understanding of aging in survivors.

In conclusion, cancer and its associated treatment may indeed be drivers of aging. However, the present study provided little evidence to support this hypothesis. On the contrary, the results show similarities rather than differences in aging between breast cancer survivors and controls.

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References

1. Mandelblatt JS, Zhou X, Small BJ, et al. Deficit accumulation frailty trajectories of older breast cancer survivors and non-cancer controls: the thinking and living with cancer study. *J Natl Cancer Inst*. 2021; 113(8):1053–1064.
2. Henderson TO, Ness KK, Cohen HJ. Accelerated aging among cancer survivors: from pediatrics to geriatrics. *Am Soc Clin Oncol Educ Bk*. 2014;(34):e423–e430.