

Explaining the Obesity Paradox—Letter

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In the recent publication entitled, "Explaining the Obesity Paradox: The Association between Body Composition and Colorectal Cancer Survival (C-SCANS Study)" (1), Caan and colleagues present data of their large observational study on body composition and colorectal cancer survival. In this interesting article, the authors demonstrated that it is very likely that the "obesity paradox" (higher BMI associated with better survival) may be driven by the underlying body composition. We have two points that we hope Caan and colleagues could clarify for us about their analyses, which will help in interpreting their findings, and in comparing their results with other articles.

First, we have a question about the selection of CT scans the authors included in their dataset. In the Materials and Methods section, the authors describe that for 83% of the patients, these scans were taken presurgery, which means that for 17% of the

patients, the scans took place after surgery. Colorectal cancer surgery and additional systemic or local treatment may importantly affect body weight and probably body composition (2), and thus, the muscle and/or fat cross-sectional areas on post-surgery CT scans may have been affected by surgery and/or other treatment. We would like to ask the authors whether they could present additional sensitivity analyses, including only patients of whom a presurgery scan was available, to assess whether this selection of CT scans affected their results.

Second, we have a question on how muscle mass was included as variable in their analyses. In defining sarcopenia, the authors created cut-off points based on the continuous variable skeletal muscle index (SMI), which is muscle mass at L3 in cm² divided by height² in meters. Adjusting muscle mass for height²—in other words adjusting for the fact that taller people have more muscle as a result of their larger body—is a sensible thing to do. However, in the analyses where the authors categorized muscle mass in tertiles, they did not use SMI in cm²/m², but they used the unadjusted muscle mass at L3 in cm². We would like to ask the authors to explain this decision, and to show whether this affected the results in Table 2 and Fig. 3B.

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Disclosure of Potential Conflicts of Interest

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References

1. Caan BJ, Meyerhardt JA, Kroenke CH, Alexeeff S, Xiao J, Weltzien E, et al. Explaining the obesity paradox: the association between body composition and colorectal cancer survival (C-SCANS Study). *Cancer Epidemiol Biomarkers Prev* 2017;26:1008–15.
2. Winkels RM, Snetselaar T, Adriaans A, van Warmerdam LJC, Vreugdenhil A, Slooter GD, et al. Changes in body weight in patients with colorectal cancer treated with surgery and adjuvant chemotherapy: an observational study. *Cancer Treat Res Commun* 2016;9:111–5.