

# Comments on “Association Between Cardiovascular Health (Life's Crucial 9) and Stress Urinary Incontinence in Women: The Mediating Role of Oxidative Stress Factors (NHANES 2005–2018)” [Letter]

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## Dear editor

We read with interest the article by Li et al on the association between LC9 and SUI in women. The topic is important, and the use of NHANES data gives the study potential public health value. However, we believe several issues should be clarified before the findings are interpreted with confidence.<sup>1</sup>

First, the survey weighting method needs clarification. The authors stated that seven NHANES cycles from 2005 to 2018 were included. However, in the Statistical Analysis section, they wrote that the two-year examination weight for each cycle was divided by two when combining the survey periods. According to published NHANES analytic practice, when multiple survey cycles are combined, the analytic weight is typically constructed by dividing the cycle-specific sample weight by the number of cycles included in the analysis. For example, Pan et al reported that, in their pooled NHANES analysis, the weight was calculated based on the dietary day 1 sample weight divided by the number of cycles.<sup>2</sup>

Second, the fully adjusted model for total LC9 may be difficult to interpret. LC9 already includes several components such as body mass index, nicotine exposure, physical activity, blood pressure, blood glucose, and depression score. However, the multivariable model for total LC9 also adjusted for BMI, smoking status, physical activity, hypertension, and diabetes. This type of repeated adjustment may weaken the meaning of the total LC9 effect and make the final estimate less clear. Overadjustment or unnecessary adjustment can obscure the interpretation of the exposure–outcome association.<sup>1,3</sup>

Third, the manuscript contains several internal inconsistencies. The Methods section reported 5592 participants, while the abstract and Table 1 reported 5292. The Results section referred to “postmenopausal participants,” although the study population was described more broadly. In addition, one heading mentioned “Association of CDAI with Reproductive Lifespan,” the propensity score matching section referred to “participants with epilepsy,” and the XGBoost section discussed factors influencing “age at menopause.” The smoking definitions also appear problematic, because passive smoking and active smoking were written with the same cotinine range. These issues make it harder for readers to judge the accuracy and reproducibility of the study.

Finally, the mediation results should also be interpreted carefully. The authors themselves noted that the study was cross-sectional and did not provide causal evidence. Previous methodological work has shown that mediation analysis based on cross-sectional data can produce biased estimates of longitudinal mediation processes.<sup>4</sup>



In summary, this study addresses an interesting question, but the weighting strategy, model adjustment, and reporting inconsistencies should be further explained. Clarification of these points would help readers better understand the true relationship between LC9 and SUI.

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## Disclosure

The authors declare that they have no competing interests for this communication.

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