


# Sarcopenia as a Stronger Predictor for All-Cause Mortality than Osteoporosis in a Medical Center in Central Taiwan [Response to Letter]

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## Dear editor

We thank Dr. Wenjian Li for the thoughtful comments on our recent article.<sup>1</sup> Their letter underscores important perspectives. While our study found that sarcopenia exhibited a stronger short-term association with mortality than osteoporosis, we acknowledge that the relatively short follow-up period may have underestimated the long-term lethality of osteoporotic fractures. Methodological factors, including diagnostic criteria, sample size, and unadjusted medication effects, could also have influenced the stability of the reported hazard ratios. Future studies with larger cohorts, standardized definitions of sarcopenia, and extended observation periods are warranted to further elucidate the independent and combined effects of sarcopenia and osteoporosis on mortality risk.

In the Results section, we stated that “the relatively short observation period (median follow-up of only 0.7 years) was mainly due to the fact that 382 of the 545 patients (approximately 70%) were enrolled later and therefore had less than one year of follow-up”. Accordingly, as Dr. Li pointed out, the long-term lethal impact of osteoporosis-related fractures may not yet have occurred or been captured by the case managers. Likewise, post-fracture functional impairment, secondary infections, and recurrent fractures may not have occurred within the study period or may develop in the future; however, these events were not the primary outcomes of our study.

According to the frailty phenotype proposed by Professor Linda P. Fried in 2001,<sup>2</sup> slow gait speed and weak grip strength were defined as the lowest 20% of participants within a given cohort, while low physical activity was similarly defined as the bottom 20%. Our geriatric research team has adopted this statistical approach in combination with the Asian Working Group for Sarcopenia (AWGS) criteria—handgrip strength, the 6-meter walking test, and the timed up-and-go test—to establish appropriate cut-off values. We have subsequently published several studies based on these methods.<sup>3-6</sup>

As suggested by the reviewers, we performed additional sensitivity analyses (four-group comparisons and interaction terms) to address the unclear sarcopenia–osteoporosis (SP–OP) interaction. Regarding medication use, denosumab and other drugs were not included as covariates in the multivariate models; the details are provided in the Supplementary Data section of our article.

Finally, due to the low statistical power, the conclusions drawn from our analyses may be subject to bias. This limitation is reflected in the wide 95% confidence intervals presented in the Results. We appreciate Dr. Li’s insightful comments—most issues have already been addressed within the manuscript or during the review process, and the remaining concerns pertain to outcomes beyond the primary scope of this study.

## Disclosure

The author reports no conflicts of interest in this communication.

## References

1. Hsieh PI, Lin SY, Hsu CY, Huang SM, Huang HT, Weng SC. Sarcopenia as a stronger predictor for all-cause mortality than osteoporosis in a medical center in Central Taiwan. *Clin Interv Aging*. 2025;20:1681–1692. doi:10.2147/CIA.S548332
2. Fried LP, Tangen CM, Walston J, Cardiovascular Health Study Collaborative Research Group, et al. Frailty in older adults: evidence for a phenotype. *J Gerontol a Biol Sci Med Sci*. 2001;56(3):M146–156. doi:10.1093/gerona/56.3.M146
3. Weng SC, Lin CS, Tarng DC, Lin SY. Physical frailty and long-term mortality in older people with chronic heart failure with preserved and reduced ejection fraction: a retrospective longitudinal study. *BMC Geriatr*. 2021;21(1):92. doi:10.1186/s12877-020-01971-4
4. Weng SC, Chen YC, Hsu CY, Lin CS, Tarng DC, Lin SY. Impacts of heart failure and physical performance on long-term mortality in old patients with chronic kidney disease. *Front Cardiovasc Med*. 2021;8:680098. doi:10.3389/fcvm.2021.680098
5. Weng SC, Lin CF, Hsu CY, Lin SY. Effect of frailty, physical performance, and chronic kidney disease on mortality in older patients with diabetes: a retrospective longitudinal cohort study. *Diabetol Metab Syndr*. 2023;15(1):7. doi:10.1186/s13098-022-00972-0
6. Weng SC, Hsu CY, Wu MF, Lee WH, Lin SY. The impact of frailty status on pulmonary function and mortality in older patients with chronic obstructive pulmonary disease. *J Nutr Health Aging*. 2023;27(11):987–995. doi:10.1007/s12603-023-2017-7

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