

## The Reply



We thank Dr. Kawada for his interest in our study on effects of coffee intake on incident chronic kidney disease.<sup>1</sup> Kawada gave us two thoughtful comments.

First, we did not observe dose-response relationship between coffee intake and risk of incident CKD in our study. There has been evidence that coffee intake is inversely associated with diabetes, dementia, and hypertension in a dose-dependent manner.<sup>2,3</sup> However, our observational study could not estimate accurate amount of coffee intake, which led us to analyze the data with frequency of coffee intake alone. In addition, potential confounding factors that could affect the outcomes might not be captured by our database. Notably, there were more smokers and alcohol drinkers in coffee consumers with  $\geq 2$  cups/day. We also found that smoking and alcohol binge drinking had a harmful impact on kidney disease progression (manuscripts in preparation). We assume that these unfavorable factors might mitigate the benefits of higher levels of coffee intake on CKD development.<sup>4,5</sup> Given great interest in the effects of coffee on health among the general population, future studies should focus on the dose-response relationship between coffee intake and incident chronic kidney disease.

Second, we agree with Kawada's opinion on the possible effect of smoking on chronic kidney disease. There have been a number of studies showing that active cigarette smoke is associated with an increased risk for chronic kidney disease.<sup>6,7</sup> As aforementioned, although we did not present the relevant data in the published article,<sup>1</sup> we found that smoking had a negative influence on chronic kidney disease in our study: Smokers (current or former) had a 20% increased risk of incident chronic kidney disease (HR, 1.21; 95% CI, 1.03-1.423). We also adjusted proteinuria by dipstick urine test, but the study did not quantitatively measure albuminuria. Nevertheless, smoking- and proteinuria-adjusted Cox model did not change the main results. Unfortunately, the database did not include the exact amount of smoking, thus cigarette dose-response relationship could not be evaluated. As Kawada commented, smoking-related kidney problems are important and our ongoing in-depth analyses using the

database from Korean chronic kidney disease cohort<sup>8</sup> will be able to clarify this association.

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<https://doi.org/10.1016/j.amjmed.2018.11.023>

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**Conf:** None / **Funding:** None

All authors had access to the data and had roles in writing the manuscript.