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## Response to “Association Between Dietary Potassium Intake and Serum Potassium in CKD”



**The Author Replies:** We appreciate the commentary provided by Dr. Brown highlighting an important consideration related to potassium tolerance. Accordingly, in this letter, we discuss the topic of potassium tolerance which was not covered in our paper, as Dr. Brown mentioned.<sup>1</sup> The reason for this was that it is not currently standard practice to avoid fasting when measuring serum potassium levels in clinical settings.<sup>2</sup> In addition, many of the reports supporting potassium tolerance were based on animal experiments.<sup>3,4</sup> It is unclear whether the same effects occur in patients with chronic kidney disease (CKD) whose ability to tolerate potassium may be impaired.<sup>5,1</sup> In fact, potassium tolerance was seen to be impaired in patients receiving dialysis.<sup>5,2</sup>

We agree with Dr Brown's comment on the importance of monitoring nonfasting serum potassium levels in patients with CKD when increasing dietary potassium because of the following, even though it is not currently standard practice to avoid fasting when measuring serum potassium levels. If potassium tolerance is found to be impaired in patients with CKD, an increased intake of dietary potassium would acutely elevate plasma or serum potassium levels, similar to what has been observed in patients

receiving dialysis.<sup>6</sup> Conversely, if potassium tolerance is found to occur in patients with CKD, it would result in a paradoxical situation where measuring serum potassium levels in patients with CKD who have fasted overnight may lead to lower serum potassium levels in those on high potassium diets than in those on low potassium diets.<sup>3,4</sup> In our paper,<sup>1</sup> we took blood samples from our study patients while they were fasting. If these patients with CKD had potassium tolerance, it is possible that the serum potassium levels used in our analysis were lower than the levels after they ate foods as a source of dietary potassium during the day.

As Dr. Brown pointed out, when managing serum potassium levels in patients with CKD, it is important to pay attention to the possibility that their levels after eating may be higher than their fasting levels. We greatly appreciate Dr. Brown's valuable input.

### SUPPLEMENTARY MATERIAL

[Supplementary File \(PDF\)](#)

**Supplementary References.**

1. Ogata S, Akashi Y, Kato S, et al. Association between dietary potassium intake estimated from multiple 24-hour urine collections and serum potassium in patients with CKD. *Kidney Int Rep.* 2023;8:584–595. <https://doi.org/10.1016/j.ekir.2022.12.005>
2. MedlinePlus. Potassium blood test. Accessed April 16, 2023. <https://medlineplus.gov/lab-tests/potassium-blood-test/>
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4. Silva P, Brown RS, Epstein FH. Adaptation to potassium. *Kidney Int.* 1977;11:466–475. <https://doi.org/10.1038/KI.1977.64>

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