LETTER

Branding foods as 'healthy' or 'unhealthy' based on marginal data calls findings into question. Reply to Kanter M [letter]

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To the Editor: We appreciate the comments by Kanter [1] on our recent publication in *Diabetologia* [2]. The letter was mainly focused on the rationale for differentiating between 'healthy' and 'unhealthy' plant-based foods and classifying potatoes as an 'unhealthy plant food'.

We distinguished 'healthy' and 'unhealthy' plant foods based on existing knowledge of the associations between intakes of these foods and chronic disease outcomes [3], rather than their metabolite profiles. Although there are many overlapping metabolites in the metabolite profile of the healthy plant-based diet index and that of the unhealthy plant-based diet index, the associations of these overlapping metabolites (39 out of 43) with healthy and unhealthy plant-based diet indices are in the opposite direction, indicating that these two dietary patterns have distinct metabolic profiles. Our procedure for creating the three plant-based diet indices was similar to that used by Martínez-González and colleagues [4]. However, the aim of that study was to explore the health effects of encouraging the consumption of all plant-derived foods while discouraging the consumption of all animal foods. Under this rationale, potatoes were included as a positive component because of their plant origin. Because not every plant food is a healthy food choice, we further categorised plant foods into 'healthy' and 'unhealthy' groups. Consistent evidence indicates that higher potato intake, especially frequent consumption of

French fries, is associated with an increased risk of type 2 diabetes [5–7]. More importantly, our study is focused on overall dietary patterns instead of metabolic signatures or health effects of individual foods. The plant-based diet indices we developed have been used in other cohorts [8–10], which also observed differential associations for healthy and unhealthy plant-based diets with respect to health outcomes. These data support the generalisability of our methods for deriving plant-based dietary indices in different populations.

We agree with Kanter that dietary modifications are a promising intervention strategy for both human health and environmental sustainability. Our metabolomics findings support the benefits of increasing consumption of healthy plant foods and decreasing (but not eliminating) the consumption of unhealthy plant foods for diabetes prevention.

Contribution statement All authors were responsible for drafting the article and revising it critically for important intellectual content. All authors approved the version to be published.

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