Dietary carbohydrate intake and mortality: reflections and reactions

The Article by Sara Seidelmann and colleagues[1] presents the analysis from the Atherosclerosis Risk in Communities study of adults aged 45–64 years over a median duration of 25 years, at six timepoints. The mean caloric intake by each adult was 1558–1655 kcal per day. I have several issues with this study. First, this analysis seems to ignore the fact that, after 25 years, participants are aged 70–89 years, which is older than the 2016 estimate of life expectancy by the US Centers for Disease Control and Prevention: 78·6 years. Second, the study does not stratify carbohydrate consumption by sex and age; these data are only available for the whole study. Third, more than 40% of the test population died during the 25 years. However, this study defined all-cause mortality with the implication that low carbohydrate diets were the only factor to cause early death in older people. There were more smokers and physically inactive participants in the group who had less than 37% of their calories from carbohydrates, both of which are known contributors to a shorter lifespan.[2]

Importantly, in a diet containing 1558 kcal, 37% carbohydrates is equal to 144 g. The US recommended daily allowance for carbohydrates[3] is 130 g, which is lower than the low-carbohydrate diet defined in this research. 1655 kcal is considered to be a starvation diet,[4] which is not feasible for participants to have maintained over 25 years. Also, data collection from memory is riddled with errors[5] and cannot be used to establish causality.

Importantly, Seidelmann and colleagues did not update the carbohydrate exposures of participants that developed heart disease, diabetes, and stroke to reduce confounding from changes in diet that could arise from the diagnosis of metabolic diseases, which was the subject of the study. Removing the most important data for research invalidates the findings.

Finally, a time-variable sensitivity analysis was selected from visits 1 and 3, and the cumulative average of carbohydrate intake was used to derive the conclusions of the study. Predicting nutrition consumption over 25 years from two datapoints is not reliable.

I declare no competing interests.

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