



Letter to the Editor

The effect of postprandial glycaemia on cognitive function – response to Young and Benton

We would like to thank Young and Benton for their interest in our work. With reference to our study⁽¹⁾, of the 98.8 g total available carbohydrate in the trifle, 60.4 g came from the added sugars (sucrose or isomaltulose). For glycaemic index (GI) testing, in which 50 g of available carbohydrate was used, this equated to 30.6 g of the test sugars. We acknowledge that the difference of 11 GI units between trifles was relatively small, but the design was not based on maximising a difference in GI. This study was designed as a practical experiment using the principle of replacing high-GI with low-GI ingredients as suggested by the Glycemic Index Foundation⁽²⁾. The relatively small difference in GI may have had an influence on the outcome, but we have also compared cognitive test scores to the same sugars ingested as sugar-sweetened beverages, thereby maximising the difference in GI between these sugars (33 GI units), and found no effect on cognitive outcomes⁽³⁾. Young and Benton suggest that we did not consider interpersonal variability in glycaemic response. We are well aware of inter- and intra-individual variability in glycaemic response and have published on the subject with a view to improving reliability⁽⁴⁾. However, Young and Benton appear to overlook that our study had a crossover design which controls for an individual's glucose tolerance status. The crossover design also addresses the comment regarding the vegan alternative.

In practice, people eat foods and meals with all of the attendant nutrient interactions and our study was designed as a practical experiment. Again though, in our previous study with sugar-sweetened beverages in which no nutrient interactions were present, there was no differential effect on cognitive performance following ingestion of the sucrose- and isomaltulose-sweetened beverages⁽³⁾.

The rationale for measuring cognitive outcomes over a 2-h period was explained in the Introduction of our article. The difference in glycaemic response to food is greatest during this time period allowing sufficient time for exogenous glucose to cross the blood–brain barrier⁽⁵⁾. Our aim was to test cognitive performance under different prevailing blood glucose concentrations. We note that differences in memory have been found over longer test durations but that there are heterogeneous findings⁽⁶⁾.

There may be dietary aspects that affect cognitive performance and we would be very interested to read of developments

in this area. However, if the purpose is to assess the impact of postprandial glycaemia on cognitive performance, then we would hope that strong trial designs are used to isolate the glycaemic response from other design factors.

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