

Differential Glycemic Effects of Low- versus High-Glycemic Index Mediterranean-Style Eating Patterns in Adults at Risk for Type 2 Diabetes: The MEDGI-Carb Randomized Controlled Trial

Background/introduction/summary

A Mediterranean-style healthy eating pattern (MED-HEP) supports metabolic health, but the utility of including low-glycemic index (GI) foods to minimize postprandial glucose excursions remain unclear. Therefore, we investigated the relative contribution of GI towards improvements in postprandial glycemia and glycemic variability after adopting a MED-HEP

Materials and Methods

We conducted a randomized, controlled dietary intervention, comparing high- versus low-GI diets in a multi-national (Italy, Sweden, and the United States) sample of adults at risk for type 2 diabetes. For 12 weeks, participants consumed either a low-GI or high-GI MED-HEP. We assessed postprandial plasma glucose and insulin responses to high- or low-GI meals, and daily glycemic variability via continuous glucose monitoring at baseline and post-intervention

Results

One hundred sixty adults (86 females, 74 males; aged 55 ± 11 y, BMI 31 ± 3 kg/m², mean \pm SD) with \geq two metabolic syndrome traits completed the intervention.

Postprandial insulin concentrations were greater after the high-GI versus the low-GI test meals at baseline ($p = 0.004$), but not post-intervention ($p = 0.17$).

Postprandial glucose after the high-GI test meal increased post-intervention, being significantly higher than that after the low-GI test meal (35%, $p < 0.001$).

Average daily glucose concentrations decreased in both groups post-intervention.

Indices of 24-h glycemic variability were reduced in the low-GI group as compared to baseline and the high-GI intervention group

Conclusions

The acute superiority in the indices of postprandial glucose control of participants who emphasized low-GI foods relative to those who emphasized high-GI foods is sustained and was further amplified over time in the context of a background MED-HEP.

Since low-GI foods are an inherent element of a traditional Mediterranean diet, our findings suggest that low-GI foods may contribute to the health benefits seen from the MED-HEP

Reference

<https://www.mdpi.com/2072-6643/14/3/706>

Acknowledgements

We thank all study participants, and Barilla, Italy, for providing some of the cereal products. We thank all personnel involved in the collection of data at all study sites

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