

Examining the health benefits from a Mediterranean diet with a low glycemic index

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The prevalence of type 2 diabetes is increasing globally, and the disease is strongly connected to an increased risk of developing cardiovascular disease.

A recent study by [food](#) and nutrition researchers at Chalmers University of Technology, among others, shows that consuming a Mediterranean diet with a low glycemic index (GI) could lead to health benefits that can help prevent type 2 diabetes.

In the current study, which is a collaboration between Purdue University, Federico II University, and Chalmers, the researchers investigated how meal-related insulin sensitivity, so-called postprandial glycemia, was affected by a diet with high and [low glycemic index](#), GI.

"Lowering [glucose levels](#) after a meal may be a strategy to reduce the prevalence of type 2 diabetes, as a meal-related glucose increase probably contributes to the development of the disease," says Thérèse Hjorth, doctoral student in food and nutrition science at Chalmers, and one of the researchers behind the study.

Previous research has shown that the GI of carbohydrate rich foods plays a major role in postprandial [blood glucose](#) levels and that diabetics manage their glucose control by choosing foods with low GI. But there has been no consensus on how GI affects non-diabetic persons, especially in the context of a healthy eating pattern (HEP).

"There is research showing that consuming Mediterranean (MED) HEP may reduce the risk of developing type 2 diabetes, but no studies have previously evaluated the effect of foods with low versus high GI in connection with a MED-HEP diet," says Thérèse Hjorth.

Low GI may be important in the Mediterranean diet's health benefits

In the study 160 participants at risk of developing type 2 diabetes completed a 12-week dietary intervention assessing the effect of MED-

HEP with a low versus high GI. Participants consumed half of their daily carbohydrates as low GI foods such as pasta, brown rice, flat bread or high GI foods such as jasmine rice, potato, mashed potatoes, couscous along with fruits, vegetables and other carbohydrate rich foods that all consumed.

"As we assumed, glucose levels were lower after the meals with a low GI diet, compared to the high GI diet – and the difference between the groups increased with time during the study. However, the difference between the groups was mostly due to the high GI participants increasing their blood glucose after a meal, while the participants that ate a low GI showed the same level as the baseline. This indicates that glucose levels are increasing after eating foods with a high GI for 12 weeks," says Thérèse Hjorth.

The researchers say that the study shows that GI affects glucose levels in the blood among non-diabetic persons despite eating a healthy Mediterranean diet. That is: a healthy diet (MED-HEP) does not compensate for a high GI diet, and one should therefore think about the carbohydrate quality of the food and choose foods with a low GI.

"As foods with low GI like pasta are part of a traditional Mediterranean diet, our results suggest that the low GI may be an important component in the Mediterranean diet's health benefits."

Results can be useful when looking for biomarkers

The Chalmers researchers say the results can be very useful when looking for specific biomarkers for consumption of foods with high versus low GI.

"Such biomarkers could be used in epidemiological studies to improve our understanding of the role of GI diets in health and disease. We will

also use the extensive data collected to better understand the role of diet, [gut microbiota](#) and plasma metabolites in explaining inter-personal differences in [glucose](#) response to [diet](#)." says Thérèse Hjorth.

The research was published in *Nutrients*.

More information: Robert E. Bergia et al, 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, *Nutrients* (2022). [DOI: 10.3390/nu14030706](#)

Provided by Chalmers University of Technology

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