

Millet-based diet can lower risk of type 2 diabetes and help manage blood glucose levels

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Credit: University of Reading

A new study has shown that eating millets can reduce the risk of developing type 2 diabetes and helps manage blood glucose levels in people with diabetes, indicating the potential to design appropriate meals with millets for diabetic and pre-diabetic people as well as for non-diabetic people as a preventive approach.

Drawing on research from 11 countries, the study published in *Frontiers in Nutrition* shows that diabetic people who consumed millet as part of their daily diet saw their [blood glucose levels](#) drop 12–15% (fasting and post-meal), and [blood](#) glucose levels went from diabetic to pre-[diabetes](#)

levels. The HbA1c (blood glucose bound to hemoglobin) levels lowered on average 17% for pre-diabetic individuals, and the levels went from pre-diabetic to normal status. These findings affirm that eating millets can lead to a better glycemic response.

The authors reviewed 80 published studies on humans of which 65 were eligible for a meta-analysis involving about 1,000 [human subjects](#), making this analysis the largest systematic review on the topic to date.

Dr. S. Anitha, the study's lead author and a Senior Nutrition Scientist at ICRISAT said:

"No one knew there were so many scientific studies undertaken on millets' effect on diabetes and these benefits were often contested. This systematic review of the studies published in scientific journals has proven that millets can keep blood glucose levels in check and reduce the risk of diabetes. It has also shown just how well these smart foods do it."

Millets, including sorghum, were consumed as staple cereals in many parts of the world until half a century ago. Investments in a few crops such as rice, wheat and maize, have edged nutritious and climate-smart crops like millets out of the plate.

Professor Ian Givens, a co-author of the study and Director at University of Reading's Institute of Food, Nutrition and Health (IFNH) said:

"Awareness of this ancient grain is just starting to spread globally, and our review shows millets having a promising role in managing and preventing type 2 diabetes. In the largest review and analysis of research into different types of [millet](#) compared to other grains such as refined rice, maize and wheat we found that millets outperform their comparison crops with lower GI and lower blood [glucose](#) levels in participants."

According to the International Diabetes Association, diabetes is increasing in all regions of the world. India, China and the U.S. have the highest numbers of people with diabetes. Africa has the largest forecasted increase of 143% from 2019 to 2045, the Middle East and North Africa 96% and South East Asia 74%. The authors urge the diversification of staples with millets to keep diabetes in check, especially across Asia and Africa.

Strengthening the case for reintroducing millets as staples, the study found that millets have a low average glycemic index (GI) of 52.7, about 36% lower GI than milled rice and refined wheat, and about 14-37 GI points lower compared to maize. All 11 types of millets studied could be defined as either low (

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