

Study suggests drinking dark tea every day may help control blood sugar to reduce diabetes risk

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Drinking dark tea every day may help to mitigate type 2 diabetes risk and progression in adults through better blood sugar control, suggests

new research presented at the [Annual Meeting of The European Association for the Study of Diabetes](#) (EASD), Hamburg (2–6 Oct).

The study, by researchers from the University of Adelaide in Australia and Southeast University in China, found that compared with never tea drinkers, daily consumers of dark tea had 53% lower risk for prediabetes and 47% reduced risk for type 2 diabetes, even after taking into account established [risk factors](#) known to drive the risk for diabetes, including age, gender, ethnicity, body mass index (BMI), average arterial blood pressure, fasting [plasma glucose](#), cholesterol, alcohol intake, smoking status, family history of diabetes and regular exercise.

"The substantial health benefits of tea, including a reduced risk of cardiovascular disease and type 2 diabetes, have been reported in several studies over recent years, but the mechanisms underlying these benefits have been unclear," notes the study's co-lead author Associate Professor Tongzhi Wu from the University of Adelaide and The Hospital Research Foundation Group Mid-Career Fellow.

"Our findings hint at the protective effects of habitual tea drinking on blood sugar management via increased glucose excretion in urine, improved insulin resistance and thus better control of blood sugar. These benefits were most pronounced among daily dark tea drinkers."

These beneficial effects on metabolic control may lie in the unique way dark tea is produced, which involves microbial fermentation, a process that may yield unique bioactive compounds (including alkaloids, free amino acids, polyphenols, polysaccharides, and their derivatives) to exhibit potent antioxidant and anti-inflammatory effects, improve both [insulin sensitivity](#) and the performance of beta cells in the pancreas, and change the composition of the bacteria in the gut.

The latest cross-sectional study included 1,923 adults (562 men, 1,361

women aged 20–80 years) living in the community across eight provinces in China. In total, 436 participants were living with diabetes and 352 with prediabetes, and 1,135 had normal blood glucose levels.

Participants included both non-habitual tea drinkers and those with a history of drinking only a single type of tea. They were asked about the frequency (i.e., never, occasionally, often and every day) and type (i.e. green, black, dark, or other tea) of tea consumption.

The researchers examined the association between both the frequency and type of tea consumption and excretion of glucose in the urine (assessed by the morning spot urine glucose-to-creatinine ratio [UGCR]), insulin resistance (measured using the triglyceride and glucose index [TyG] derived from fasting plasma glucose and fasting triglyceride levels), and glycemic status (defined as a history of type 2 diabetes, current use of antidiabetic medications, or an abnormal 75g oral glucose tolerance test).

People with diabetes often have enhanced capacity for renal glucose reabsorption, so their kidneys retrieve more glucose, preventing it from being excreted in urine, which contributes to the higher blood sugar.

After accounting for differences in age, sex, and clinical and lifestyle factors, the analysis found that drinking tea every day was associated with an increase in urinary glucose excretion (UGCR by 0.11 mmol/mmol) and a reduction in insulin resistance (TyG by -0.23), as well as 15% lower risk for prediabetes and 28% reduced risk for type 2 diabetes, compared with never tea-drinkers.

These favorable health effects were most robust for dark tea drinkers, with consumption of dark tea associated with an increase in UGCR by 0.16 mmol/mmol and a reduction in TyG by 0.31.

According to Associate Professor Wu, "These findings suggest that the actions of bioactive compounds in dark tea may directly or indirectly modulate glucose excretion in the kidneys, an effect, to some extent, mimicking that of sodium-glucose co-transporter-2 (SGLT2) inhibitors, a new anti-diabetic drug class that is not only effective at preventing and treating type 2 diabetes, but also has a substantial protective effects on the heart and kidneys."

Co-lead author Professor Zilin Sun from Southeast University adds, "Our findings suggest that drinking dark tea every day has the potential to lessen type 2 [diabetes risk](#) and progression through better blood sugar control. When you look at all the different biomarkers associated with habitual drinking of dark tea, it may be one simple step people can easily take to improve their diet and health."

Despite the promising findings, the authors caution that as with any observational study, the findings cannot prove that drinking tea every day improves blood sugar control by increasing urinary glucose excretion and reducing [insulin resistance](#), but suggest that they are likely to contribute.

They are currently conducting a double-blind, randomized trial to investigate the benefits of dark tea on blood [glucose](#) control in people living with type 2 diabetes to validate their findings. In addition, they cannot rule out the possibility that residual confounding by other lifestyle and physiological factors may have affected the results.

Provided by Diabetologia

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