

Study shows replacing one serving of sugary drink per day by water/unsweetened tea/coffee cuts risk of type 2 diabetes

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New research published today in *Diabetologia* (the journal of the European Association for the Study of Diabetes) indicates that for each 5% increase of a person's total energy intake provided by sweet drinks including soft drinks, the risk of developing type 2 diabetes may increase by 18%. However, the study also estimates that replacing the daily consumption of one serving of a sugary drink with either water or unsweetened tea or coffee can lower the risk of developing diabetes by between 14% and 25%.

This research is based on the large EPIC-Norfolk study which included more than 25,000 men and women aged 40-79 years living in Norfolk,

UK. Study participants recorded everything that they ate and drank for 7 consecutive days covering weekdays and weekend days, with particular attention to type, amount and frequency of consumption, and whether sugar was added by the participants. During approximately 11 years of follow-up, 847 study participants were diagnosed with new-onset [type 2 diabetes](#).

Lead scientist Dr Nita Forouhi, of the UK Medical Research Council (MRC) Epidemiology Unit, University of Cambridge, said: "By using this detailed dietary assessment with a food diary, we were able to study several different types of sugary beverages, including sugar-sweetened soft drinks, sweetened tea or coffee and sweetened milk drinks as well as artificially sweetened beverages (ASB) and fruit juice, and to examine what would happen if water, unsweetened tea or coffee or ASB were substituted for sugary drinks."

In an analysis that accounted for a range of important factors including total energy intake the researchers found that there was an approximately 22% increased risk of developing type 2 diabetes per extra serving per day habitually of each of soft drinks, sweetened milk beverages and ASB consumed, but that consumption of fruit juice and sweetened tea or coffee was not related to diabetes. After further accounting for body mass index and waist girth as markers of obesity, there remained a higher risk of diabetes associated with consumption of both soft drinks and sweetened milk drinks, but the link with ASB consumption no longer remained, likely explained by the greater consumption of ASB by those who were already overweight or obese.

This new research with the greater detail on types of beverages adds to previous research published in *Diabetologia* by the authors in 2013 which collected information from food frequency questionnaires across 8 European countries. That previous work indicated that habitual daily consumption of sugar sweetened beverages (defined as carbonated soft

drinks or diluted syrups) was linked with higher risk of type 2 diabetes, consistent with the current new findings.

In this new study, the authors also found that if study participants had replaced a serving of soft drinks with a serving of water or unsweetened tea or coffee, the risk of diabetes could have been cut by 14%; and by replacing a serving of sweetened milk beverage with water or unsweetened tea or coffee, that reduction could have been 20%-25%. However, consuming ASB instead of any sugar-sweetened drink was not associated with a statistically significant reduction in type 2 diabetes, when accounting for baseline obesity and total energy intake.

Finally, they found that each 5% of higher intake of energy (as a proportion of total daily energy intake) from total sweet beverages ([soft drinks](#), sweetened tea or coffee, sweetened milk beverages, fruit juice) was associated with a 18% higher risk of diabetes. The authors estimated that if study participants had reduced the energy they obtained from sweet beverages to below 10%, 5% or 2% of total daily energy, 3%, 7% or 15% respectively of new-onset diabetes cases could have been avoided.

Dr Forouhi said: "The good news is that our study provides evidence that replacing a daily serving of a sugary soft drink or sugary milk drink with water or unsweetened tea or coffee can help to cut the risk of diabetes, offering practical suggestions for healthy alternative drinks for the prevention of diabetes."

The authors acknowledge limitations of dietary research which relies on asking people what they eat, but their study was large with long follow-up and had detailed assessment of diet that was collected in real-time as people consumed the food/drinks, rather than relying on memory. They concluded that their study helps to provide evidence with a robust method within the currently available methods and with detailed

attention to accounting for factors that could distort the findings.

Commenting on the wider implications of these results, Dr Forouhi concluded: "Our new findings on the potential to reduce the burden of [diabetes](#) by reducing the percentage of energy consumed from sweet beverages add further important evidence to the recommendation from the World Health Organization to limit the intake of free sugars in our diet."

Provided by Diabetologia

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