New research presented at this year's annual meeting of the European Association for the Study of Diabetes (EASD) in Stockholm shows that high consumption of sugar-sweetened beverages, which has been linked to increased risk of type 2 diabetes, is part of a poor overall diet. Thus care must be taken when linking such beverages to disease risk, say the authors from Lund University, Malmö, Sweden, led by Louise Brunkwall.

Consumption of several beverages has been associated with risk of type 2 diabetes; high coffee and tea consumption has been associated with a decreased risk and high consumption of sugar-sweetened beverages (SSB) with an increased risk. Regarding juice and artificially sweetened beverages (ASB), the results are inconclusive. As beverages are part of our overall diet and lifestyle, the authors hypothesised that high
consumption of these beverages (SSB, ASB, juice, coffee and tea) may be associated with certain characteristics of the overall diet that could be difficult to take into account when analysing associations between beverage consumption and disease.

Analyses were performed among 25,112 individuals (60% women, 45-74 years, mean body mass index [BMI]=25.6) without prevalent diabetes, cardiovascular disease or cancer from the population based Swedish Malmö Diet and Cancer Cohort. Intake of beverages, macronutrients and 24 food groups were obtained from a modified diet history method including a 7-day food record, a 168-item questionnaire and a 45 min interview. To examine food intakes across five intake groups of the different beverages, they used computer modelling adjusted for age, sex, season, method, BMI, leisure time physical activity, total energy intake, smoking, education and alcohol intake.

The authors say: "We observed a high consumption of SSBs to be significantly associated with lower intakes of foods generally perceived as healthy; the largest intake differences between high and low consumers of SSBs were seen for fruits, vegetables, yoghurt, breakfast cereals, fibre rich bread and fish."

They add: "In contrast, high consumption of both tea and juice was significantly associated with higher intakes of foods perceived as healthy; the largest differences were seen for fruits, vegetables and yoghurt. High consumption of ASBs was significantly associated with higher intakes of low fat products; low fat milk and margarines. High consumption of coffee associated with higher intakes of meat and high fat margarine, and a lower intake of breakfast cereals."

They conclude: "As this study is cross-sectional we can not draw any conclusions about causality or the exact effect of the diet or beverage. However our results indicate that the associations previously seen with
sugar sweetened beverages might be due to that individuals consuming a lot of these beverages also have a diet low in healthy foods which in combination give associations with serveral chronic diseases such as type 2 diabetes."

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