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**Topic:** The impact of food systems on nutrition, diet and health

**Title: Associations of sweetened beverage intake with energy, sugar and cardio-metabolic markers in UK children**

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### Introduction

Artificially sweetened beverages (ASBs) have been promoted as healthy alternatives of sugar-sweetened beverages (SSBs) in order to reduce sugar intake but their effect on weight control and glycemia has been debated. This study examines associations of SSBs and ASBs with energy and sugar intake and cardiometabolic measurements.

### Methods

1,687 children 4-18 years old participated in the National Diet and Nutrition Survey Rolling program (2008/9 – 2011/12) in the UK. Linear least squares and linear fixed effects regressions were used to examine associations between SSBs and ASBs and energy and sugar, overall and from solid foods and beverages, and blood analytes.

### Results

SSB consumers had higher intake of sugar overall (6.15%; 4.18, 8.12) and ASB consumers had a higher intake of sugar from solid foods (1.67%; 0.46, 2.88). Shifting from a day of non-consumption to a day of SSB consumption increased energy and sugar intakes (216 kcal; 163, 269 and 7.00%; 6.17, 7.83) whereas shifting to a day of ASB consumption decreased sugar intake (-0.98%, -1.81, -0.14). SSB consumers had higher triglyceride levels (0.29 mmol/L; 0.13, 0.46) and SSB and ASB consumers higher blood glucose levels (SSB: 0.30 mmol/L; 0.11, 0.49; ASB: 0.24 mmol/L; 0.06, 0.43) compared to non-consumers.

## Conclusion

SSBs contributed towards higher total sugar intake but ASBs were associated with higher sugar intake from solid foods. Both were related to a less healthy cardiometabolic profile. Policy should incorporate effective methods to minimise SSB consumption, such as product reformulation, fiscal measures and labelling, without driving consumers towards ASB consumption.