Consumption of free sugars by secondary school children in the UK lower during snacking periods than at main mealtimes

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New research presented at this year's European Congress on Obesity (held online, 10-13 May) reveals that consumption of free sugars (FS) is

greater outside of school hours than consumption inside school hours, and that snacking periods are associated with lower FS intake than main mealtimes. The research was conducted by Abigail Stewart and colleagues, Institute of Applied Health Research, University of Birmingham, Birmingham, UK.

Free sugars (FS) are defined as those monosaccharides (glucose, fructose, etc) and disaccharides (sucrose, maltose, etc) which are added to foods by manufacturers, used as ingredients in recipes, or are present naturally in honey, syrups and unsweetened fruit juices. Excess intake of FS increases the risk of obesity and cardiovascular disease, and adolescents in the UK consume on average more than three times the recommended daily intake of these simple carbohydrates.

The goal of this study was to develop a more detailed understanding of when and where adolescents age 11-15 in the UK are consuming FS, as well as to examine possible links between sociodemographic factors and FS intake. Its findings should help interventions aimed at reducing FS consumption to be better targeted at the highest risk eating occasions, and at those individuals most likely to have a large quantity of FS in their diet.

The team conducted their research between January-April 2020 within the framework of the 'Food provision, cUlture and Environment in secondary schooLs' (FUEL) study. Sample groups of secondary level pupils were selected to ensure the representation of a range of school characteristics, from Academies and Free Schools in the West Midlands region of the United Kingdom. Each of the chosen schools selected a year 7 (age 11-12), year 9 (age 13-14) and year 10 (age 14-15) class to participate in the study. Pupils provided online consent to take part, and parents were given the opportunity to 'opt-out' their child.

Pupils completed a sociodemographic questionnaire then recorded their

food and drink intake over the previous 24 hours using the online 'Intake24' tool. They were also asked to record how their consumption was distributed across six eating occasions: breakfast, early snack or drink, lunch, afternoon snack or drink, Evening meal and late snack or drink, together with the time and location for each, including whether it occurred in or outside of school.

Among the 813 participants in the study, the median daily FS intake was 57.2 grams, and their intake in school (median of 14.5g) was less than their intake outside of school (median of 37.0g). Across the three mealtimes, sugar intake was highest at breakfast, with a median of 8.8 grams consumed during this meal. The average intake of FS at snack times were lower than at mealtimes, which may be accounted for by the high proportion of children in the study that did not consume food or drinks at snack times.

There were no statistically significant differences in FS intake associated with age, gender, ethnicity, or deprivation, which the authors say is a surprising finding since it contradicts current research.

Author Abigail Stewart explains: "High free sugar consumption was associated with eating outside of school time rather than inside school time. This could suggest that environmental or physical factors are present in homes which increase sugar consumption and should be further studied. However, these findings are surprising considering students are left to decide their own meals whilst at school—perhaps school environments promote a lower sugar consumption, or there are more treats available at home. As most interventions to reduce childhood obesity have been based in school, it is important to consider targeting interventions to reduce child obesity and free sugar consumption at home, at main mealtimes."