



Sugar-sweetened beverage consumption and height loss: a longitudinal analysis in the EPIC- Norfolk study

J.Y. Lee^{1,2} and F. Imamura²

¹Cancer Epidemiology Unit, Nuffield Department of Population Health, University of Oxford, Oxford, UK and

²MRC Epidemiology Unit, School of Clinical Medicine, University of Cambridge, Cambridge, UK

Height loss in ageing can begin around the age of 40 years. It is of public health relevance because of its association with a decline in musculoskeletal health, such as low bone mineral density⁽¹⁾. It is also linked to obesity status as height is a denominator of body mass index (BMI). Sugar-sweetened beverage (SSB) consumption is a risk factor for obesity and is separately postulated to deteriorate musculoskeletal health⁽²⁾. However, no study has related SSB consumption to height loss in ageing. This study aimed to evaluate the association of the habitual consumption of SSB and its subtypes with height loss in ageing.

A longitudinal analysis was conducted among 16,230 adults aged 40–79 years in the European Prospective Investigation into Cancer and Nutrition Norfolk (EPIC-Norfolk) cohort⁽³⁾. At baseline (1993–1997), SSB consumption (soft drinks, squashes, sweetened milk beverages, sweetened coffee or tea, sweetened alcoholic beverages) was assessed using 7-day food diaries. Height was repeatedly measured at the baseline, the first (1997–2000), and the second (2004–2011) follow-ups. The repeated height measurements were used to estimate the rate of height change (cm/10 years) for each participant. Multivariable linear regression was used to assess the association of baseline consumption of total SSB and its subtypes with the rate of height change.

The mean (SD) rate of height change was -1.27 (2.24) cm/10 years. Adjusted for demographics, socioeconomic status, smoking, physical activity, medical history, dietary factors, and adiposity, higher total SSB consumption was associated with greater height loss ($\beta = -0.024$ cm/10 years per 250 grams/day of SSB [95% confidence interval: -0.046, -0.001]), but not for the individual SSB subtypes. Baseline BMI modified the association of total SSBs with height loss ($P^{\text{interaction}} = 0.037$). Total SSB consumption was significantly associated with greater height loss in normal or underweight adults (BMI < 25 kg/m²) ($\beta = -0.038$ cm/10 years per 250 grams/day of SSB [95% confidence interval: -0.073, -0.004]) but not in those who were overweight or obese (BMI \geq 25 kg/m²).

SSB consumption was associated with height loss, particularly in adults with normal or underweight BMI status. While the association was weak, this study provides novel insight into the potential influence of SSBs on height loss in ageing and supports previous evidence on SSB consumption and musculoskeletal health. It may also suggest an additional implication towards the interventions aimed at reducing SSB consumption.

References

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