



## Intake of free sugars by 11–13-year-old schoolchildren living in Delhi, India

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Intake of free sugars is associated with a risk of non-communicable diseases including dental caries, and authoritative organisations recommend limiting intake to <5% energy intake (E) or lower<sup>(1,2)</sup>. National surveys of schoolchildren in India indicate the prevalence of obesity is rising >10%/year<sup>(3)</sup> and that 52.5% of young adolescents are affected with dental caries<sup>(4)</sup>, yet, there is a dearth of data on dietary intake of sugars by this population. The objective of this research was to assess the intake of total and free sugars, and the contribution of food sources to free sugars intake, in a random sample of 11–13-year-old schoolchildren in Delhi, India. The study was approved by The University of Adelaide Human Research Ethics Committee and the Independent Ethics Committee of the Centre for Chronic Disease Control, New Delhi. The target sample size of 360 was based on a  $\pm 5\%$  margin of error in estimated sugars intake. A statistician external to the research team generated a random sample of 150 schools stratified by district ( $n = 11$ ). Schools were recruited in turn from the list until 10 schools had consented. Teachers shared study information with parents who were invited to complete an online consent form. Child assent was obtained before data collection. Participants recorded all food and drink consumed over three consecutive days, including one weekend day, in a food diary. The information recorded was entered into an online dietary assessment tool, Intake24 (Southeast Asia version), during an interview with each participant during which portion size was ascertained with reference to the database of over 2400 food photographs of more than 100 foods. The Intake24 database converted food and drink reported into the intake of total and free sugars through integrated food compositional tables. Of 514 pupils providing consent, 393 participants (76.5%) (169 girls, 224 boys) completed the study. In girls, the median (IQR) daily intakes of total and free sugars were 95.0 (70.1–120.2) g/day and 43.0 (28.1–68.5) g/day respectively. The corresponding values in boys were significantly higher at 104.0 (80.2–138.7) g/day and 53.1 (34.1–76.5) g/day ( $p = 0.004$ ). No between-gender difference was observed in the median percent contribution of sugars to E: total and free sugars contributed 14.9% (IQR 11.4–18.1%) and 7.1% (IQR 4.8–10.1%) respectively. The percent contribution of the main sources of sugars to free sugars intake were: (i) Sugars Preserves and Syrups (31.2% (IQR 9.6–51.7%)); (ii) Cakes and Biscuits (13.7% (IQR 0–26.4%)); (iii) Desserts (5.4% (0–17.5%)) and (iv) Sugar-Sweetened Beverages and Juices (2.1% (IQR 0–15.7%)). In conclusion, in this sample of 11–13-year-old schoolchildren from Delhi, free sugars intake was above the WHO <5% E threshold. Forms of sugars that are added to foods by the consumer made the largest contribution to intake.

**Keywords:** dietary sugars; diet record; India; schools

### Ethics Declaration

Yes

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### References

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