



Iodine intakes in school age girls aged 5–18 years in Ireland

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Iodine is an essential trace mineral and a key component of thyroid hormones which are majorly involved in growth and neurodevelopment in utero, and during childhood^(1–2). Insufficient dietary iodine intakes especially during childhood can lead to a variety of preventable health and developmental outcomes⁽²⁾. Consequently, continuous monitoring of a population's iodine adequacy is important. Therefore, this study aimed to estimate dietary iodine intakes from a nationally representative sample of Irish school-aged girls aged 5–18 years.

Analyses were based on data from the Irish National Children's Food Survey II (NCFS II; 2017–2018) and the National Teens' Food Survey II (NTFS II; 2019–2020) (www.iuna.net) which were nationally representative of the Irish population. However, as there was a greater proportion of those in the higher social class categories in both surveys, a statistical weighting factor was applied. Food and beverage intake data were collected using a four-day weighed food diary and dietary iodine intakes ($\mu\text{g}/\text{d}$) were estimated using food composition data sourced from the Irish Total Diet Study⁽³⁾. Adequacy of iodine intakes and the percentage contribution of food categories to overall dietary iodine intakes were assessed. The impact of milk consumption on iodine intakes was investigated based on non- consumers, low, medium, and high consumers of milk.

Median (IQR) iodine intakes in Irish school-aged girls were $94.8\mu\text{g}/\text{d}$ (IQR 7.8, $1674\mu\text{g}/\text{d}$), with 47% of girls with intakes below the Estimated Average Requirement (EAR) of $65\text{--}95\mu\text{g}/\text{d}$ ⁽⁴⁾. Younger girls (5–10 years) had significantly higher iodine intakes compared to older girls (11–18 years) ($108\mu\text{g}/\text{d}$ compared to $86.0\mu\text{g}/\text{d}$) ($P < 0.001$). Children whose parents had a higher social class and a higher level of education, had significantly lower iodine intakes compared to children with parents of a lower social class and lower level of education. Those living in the country had significantly higher intakes compared to those living in a city. The main dietary source of iodine for this population group was milk, which contributed to over 50% of dietary iodine intake. The next biggest contributors were breakfast cereals, creams, ice creams, and desserts, each contributing 4–5% to dietary intakes. Regarding milk consumers, non-consumers had significantly lower dietary iodine intakes compared to medium and high consumers of milk ($P < 0.001$).

This study indicates that almost half of school-aged girls in Ireland fell below the EAR for iodine. That being said, as milk consumption has a major impact on iodine intakes, dietary patterns and dairy practices may need to be closely monitored especially due to recent declines observed in dairy consumption in this age group. Future research should assess urinary iodine concentrations which will give a better indication of iodine status.

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References

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