

Age-related differences in nutrient intakes from meals and snacks in a nationally representative sample of young children aged 1–3 years in Ireland

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The early childhood years are a critical period of growth and development with high energy and nutrient needs. It has previously been reported that most (99–100%) pre-schoolers in Ireland consumed meals and snacks, with breakfast, lunch, dinner and snacks each contributing 22–25% of energy intakes (%E)⁽¹⁾.

Furthermore, this population group have high intakes of saturated fat, free sugar and salt and low intakes of vitamin D, iron and long-chain-PUFA⁽²⁾. The aim of this study was to examine age-related differences in the intakes of saturated fat, free sugars, vitamin D and iron from meals and snacks in children aged 1–3 years in Ireland. Analyses were based on the National Pre-School Nutrition Survey (NPNS) (2010–11) which used a 4-day weighed food diary to collect food and beverage intake data in pre-school children (1–4y) (www.iuna.net) (subgroup of 1–3-year-olds (n 376) used for this study). Nutrient intakes were estimated using WISP[®] based on UK and Irish food composition databases^(3,4). Meal types were participant-defined (by caregiver) during the recording period and categorised (using SPSS[®] V26) into ‘breakfast’, ‘lunch’, ‘dinner’ and ‘snacks’. Significant differences ($p < 0.001$) in intakes of nutrients (energy-adjusted, excluding supplements) from meals/snacks across age-groups (1y, 2y, 3y) were assessed using a one-way ANOVA with Tukey post-hoc tests. From breakfast, 1-year-olds had higher intakes of saturated fat (15%E) and iron (11.5mg/1000kcal) compared to 2- and 3-year-olds (13–14%E and 10.5–10.5mg/1000kcal, respectively), intakes of free sugars increased with increasing age (1y: 8%E, 2y: 11%E, 3y: 15%E), and 1- and 2-year-olds had higher intakes of vitamin D (2.8–3.3µg/1000kcal) compared to 3-year-olds (2.2µg/1000kcal). From lunch, there were no differences in saturated fat intake across age-groups. With increasing age, intakes of free sugars increased (1y: 7%E, 2y: 9%E, 3y: 11%E), intakes of iron decreased (1y: 5.7mg/1000kcal, 2y: 5.2mg/1000kcal, 3y: 4.9mg/1000kcal) and 1- and 2-year-olds had higher intakes of vitamin D (1.9–2.1µg/1000kcal) compared to 3-year-olds (1.6µg/1000kcal). From dinner, there were no differences in vitamin D intake across age-groups. Three-year-olds had higher intakes of saturated fat (15%E) compared to 1- and 2-year-olds (13–14%E), 1-year-olds had lower intakes of free sugars (6%E) compared to 2- and 3-year-olds (7–8%E) and higher intakes of iron (5.6mg/1000kcal) compared to 2-year-olds (4.9mg/1000kcal). From snacks, 1- and 3-year-olds had higher intakes of saturated fat (15%) compared to 2-year-olds (13%E), 3-year-olds had higher intakes of free sugars (19%E) and lower intakes of iron (3.8mg/1000kcal) compared to 1- and 2-year-olds (16%E and 4.6–4.8mg/1000kcal, respectively) and intakes of vitamin D decreased with increasing age (1y: 2.3µg/1000kcal, 2y: 1.6µg/1000kcal, 3y: 1.2µg/1000kcal). This study provides important information on the intake of nutrients from meals and snacks across age-groups among young children in Ireland and will be useful for policy makers and health professionals to inform strategies to improve the dietary patterns of this population.

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References

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