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# The prevalence of inadequate micronutrient intakes and risk of excessive intakes in adults in Ireland: Findings from the National Adult Nutrition Survey II

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Adequate nutrition is important for health at all life stages with micronutrients having an important role in long term health, cognition, healthy development and ageing<sup>(1)</sup>. The aim of this study was to estimate the prevalence of inadequate intakes and risk of excessive intakes of micronutrients among adults aged 19–64 years and 65 years and over, from a nationally representative sample of adults in Ireland.

Analyses were based on the National Adult Nutrition Survey II (NANS II) (2020–21) of 19–92 year olds in the Republic of Ireland (*n* 1000) (19–64y: 718, ≥65y: 282) ([www.iuna.net](http://www.iuna.net)). Food and beverage intake data (including nutritional supplements) were collected via two independent 24-hour telephone dietary recalls (at least 7 days apart, with each day of the week accounted for in the sampling plan). To assist with the recall, older adults (≥65years) were asked to record their foods the day before the dietary recall and all participants were provided with a photographic food atlas before the scheduled dietary recall. Nutrient intakes were estimated using Nutritics<sup>®</sup> based on UK food composition data which was updated to include recipes of composite dishes, nutritional supplements, fortified foods and generic Irish foods that were commonly consumed. Usual intakes of micronutrients were calculated via the NCI-method using SAS<sup>®</sup> Enterprise Guide. The prevalence of inadequate intakes of micronutrients (excluding energy under-reporters)<sup>(2)</sup> was estimated using estimated average requirements established by the US Institute of Medicine (IOM) (vitamin D)<sup>(3)</sup>, the UK Department of Health (DOH) (thiamin, vitamin B12)<sup>(4)</sup> and the European Food Safety Authority (EFSA) (all other micronutrients)<sup>(5)</sup>. The risk of excessive intake was evaluated by comparing intakes to tolerable upper intake levels (ULs) established by the US Food and Nutrition Board (vitamin C, iron)<sup>(6)</sup> and EFSA (all other micronutrients)<sup>(7)</sup>.

Among those aged 19–64 years, a large proportion of adults had inadequate intakes of vitamin D (61%), vitamin C (41%), folate (37%), calcium (32%), zinc (28%), vitamin B6 (26%), riboflavin (23%), vitamin A (16%) and iron (8%; up to 14% for females). Similarly, a large proportion of adults aged 65 years and over had inadequate intakes of vitamin D (48%), vitamin C (43%), folate (36%), zinc (35%), calcium (31%), vitamin B6 (29%), riboflavin (21%), vitamin A (13%) and iron (11%; up to 13% for females).

The proportion of adults with intakes exceeding the UL was negligible for retinol, vitamins D, E, C, B6, preformed niacin, folic acid, calcium and iron (19–64y: <0.3%; ≥65y: <0.7%) and for zinc (19–64y: 2%; ≥65y: 1%).

These findings indicate that based on current dietary patterns, significant numbers of adults in Ireland have inadequate intakes of key micronutrients and highlight the need to investigate targeted dietary strategies to address these low intakes among this population group.

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