

## Micronutrient intakes and adequacy of intake in older adults in Ireland

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A growing body of evidence exists to support the role of micronutrients in healthy ageing. The objective of this study was to estimate micronutrient intakes and adequacy of intake in a sample of older adults ( $\geq 65$  years) in Ireland. Analysis was based on the National Adult Nutrition Survey (NANS), (2008–2010), which collected comprehensive dietary intake data of a representative sample of Irish adults ( $n = 1500$ ) using a 4-day semi-weighed food and beverage record. A sub-sample of adults aged 65 years and over ( $n = 226$ ) were selected and nutrient analyses were carried out using a modified version of WISP<sup>®</sup> (Tinuviel Software, Anglesey, UK), which encompasses both UK<sup>(1)</sup> and Irish<sup>(2)</sup> food composition data. Modifications included compositional updates for fortified foods, nutritional supplements and composite dishes. Adequacy of micronutrient intake was assessed using UK estimated average requirements (EAR)<sup>(3)</sup> and the Institute of Medicine's EAR<sup>(4)</sup> in the case of vitamin D. Under-reporters (URs), defined using minimum energy intake cut-off points<sup>5</sup>, calculated as multiples of BMR (Tanita BC 420MA Body Composition Analyser), were excluded from the analysis.

Daily micronutrient intakes of older adults (mean and SD), (excluding URs) and the proportion with intakes below the EAR are reported in the table below.

	Men ( $n = 75$ )			Women ( $n = 87$ )		
	Mean	SD	% < EAR	Mean	SD	% < EAR
Vitamin A ( $\mu\text{g}$ )	1492	812	8.0	1425	813	3.4
Vitamin D ( $\mu\text{g}$ )	5.6	4.0	85.3	8.7	9.6	74.7
Thiamin (mg)	2.0	0.8	0.0	3.2	6.6	0.0
Riboflavin (mg)	2.1	0.8	9.3	3.6	8.2	5.7
Total niacin (mg)	42.5	14.4	0.0	44.0	45.2	0.0
Vitamin B6 (mg)	3.3	1.6	0.0	4.6	9.3	0.0
Vitamin B12 ( $\mu\text{g}$ )	7.1	5.0	0.0	7.2	7.7	2.3
Folate ( $\mu\text{g}$ )	497	615	8.0	382	236	10.3
Vitamin C (mg)	105	154	14.7	127	188	5.7
Calcium (mg)	986	399	8.0	1106	615	8.0
Magnesium (mg)	305	108	37.3	283	137	28.7
Iron (mg)	17.4	20.4	6.7	14.7	26.0	10.3
Zinc (mg)	10.9	4.5	18.7	11.1	12.5	12.6

Our study found that a significant proportion of older adults had inadequate intakes for vitamin D and magnesium. Inadequate intakes ( $>10\%$ ) were observed for vitamin C and zinc in men, and for zinc, iron and folate in older women. These findings highlight the need to investigate strategies to address low micronutrient intake in older adults.

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