

The challenge of translating nutrition research into public health nutrition, University College, Dublin, 18–20 June 2008

The effect of nutritional supplements on adequacy of micronutrient intakes in Irish teenagers aged 13–17 years

E. Walsh, J. Walton, E. M. Hannon and A. Flynn

Department of Food and Nutritional Science, University College Cork, Cork, Republic of Ireland

The objective of the study was to investigate the contribution of nutritional supplements to micronutrient intake and adequacy in Irish teenagers. Analysis was based on the National Teens' Food Survey (NTFS), which was carried out between September 2005 and September 2006 to establish a database of habitual food and drink consumption in a representative sample of Irish teenagers aged 13–17 years. A 7 d semi-weighed food record was used to collect food intake data from 441 teenagers (224 males, 217 females). Analysis of dietary intake data was carried out using WISP© (Tinuviel Software, Llanfechell, Anglesey, UK), which is based on *McCance and Widdowson's The Composition of Foods, Sixth Edition*⁽¹⁾. Nutritional supplement use was recorded by the respondent in the food diary. The food composition database was updated to include all nutritional supplements consumed (*n* 74).

Approximately one-quarter (24%) of Irish teenagers consumed a nutritional supplement at least once during the 7 d of recording. Of the seventy-four nutritional supplements consumed during the NTFS 38% (*n* 28) were multivitamins and minerals, 16% (*n* 12) were multivitamins, 12% (*n* 9) were fish or cod-liver oils and 12% (*n* 9) were vitamin C supplements. The percentage with mean daily intakes (MDI) below the estimated average requirement (EAR)⁽²⁾ for selected micronutrients is reported as an estimate of the prevalence of inadequate intakes⁽³⁾ in both supplement users (from all sources and from food sources only, excluding supplements) and non-users.

Micronutrient	% below the EAR		
	Supplement users (<i>n</i> 106)		Non-users (<i>n</i> 335)
	Food and supplements	Food only	
Ca	16	18	38
Fe	28	43	53
Zn	13	22	36
Vitamin C	0	4	9
Folate	4	9	21
Riboflavin	4	9	18
Vitamin A	12	26	33

Among supplement users the removal of supplements from the analysis resulted in increases in the percentage with MDI below the EAR for Fe, Zn and vitamin A, but had little effect on Ca, vitamin C, folate and riboflavin. The percentage of teenagers with MDI from food sources only that were below the EAR was lower in supplement users compared with non-users for all micronutrients examined, but especially for Ca, Zn, Fe and folate. When under-reporters were excluded, the percentage of teenagers with MDIs below the EAR was lower for both supplement users (food and supplements) and non-users (Ca: 6 v 13; Fe: 22 v 35; Zn: 6 v 9; Vit C: 0 v 1; Folate: 0 v 6; Riboflavin: 0 v 5; Vitamin A: 4 v 17).

The project was funded by the Irish Government under the National Development Plan 2000–2006.

1. Food Standards Agency (2002) *McCance & Widdowson's The Composition of Foods Sixth Edition*. Cambridge: Royal Society of Chemistry.
2. Department of Health (1991) *Dietary Reference Values for Food Energy and Nutrients for the United Kingdom. Report on Health and Social Subjects* no. 41. London: H. M. Stationery Office.
3. Carriquiry AL (1999) *Public Health Nutr* 2, 23–33.