

## Micronutrient intake and adequacy in women of child-bearing age (WCBA) (18–50y) in Ireland

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There is an increasing recognition that women’s pre-conceptual health (including nutritional status) sets the foundation for a successful pregnancy and the subsequent lifelong health of the baby. Almost half of pregnancies in Ireland are unplanned and dietary recommendations for women of child-bearing age (WCBA) are not differentiated by pregnancy intention. A daily 400µg folic acid supplement is recommended for all WCBA to reduce the risk of neural tube defect in an occurring pregnancy<sup>(1)</sup>. The objective of this study was to estimate micronutrient intake, adequacy of intake and compliance with the folic acid supplement recommendation in WCBA (18–50y) in Ireland. Analyses were based on the National Adult Nutrition Survey (NANS) (2008–2010) ([www.iuna.net](http://www.iuna.net)). A 4 day semi-weighed food record was used to collect food and beverage intake data (including nutritional supplement use) from a nationally representative sample of 1500 adults (487 women (18–50y)). Nutrient analyses were carried out using UK<sup>(2)</sup> and Irish<sup>(3)</sup> food composition data. Usual intakes of nutrients were calculated via the NCI-method using SAS<sup>®</sup> Enterprise Guide<sup>(4)</sup>. Adequacy of micronutrient intake was assessed using the most recently published estimated average requirements (EAR) from the European Food Safety Authority (EFSA)<sup>(5)</sup> or the UK Department of Health<sup>(6)</sup> and the Institute of Medicine’s EAR in the case of vitamin D and iodine<sup>(7,8)</sup>. Under-reporters (32% of sample), defined using minimum energy intake cut-off points, calculated as multiples of BMR were excluded from analyses.

Only 6% of WCBA complied with the recommendation to take a folic acid supplement (400µg) daily to supplement their dietary folate intake. Furthermore, a significant proportion of women of child-bearing age had inadequate intakes of important nutrients including vitamins A, D & C, riboflavin, dietary folate equivalents, calcium and iodine. Strategies to increase micronutrient intakes and improve compliance with the folic acid supplement recommendation are needed to improve pre-conceptual health status for women of WCBA in Ireland.

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**Table 1.** Usual micronutrient intakes in women of childbearing age and the proportion of women with micronutrient intakes below the estimated average requirement (EAR) excluding under-reporters (n 335)

| Micronutrients                  | Mean | SD   | Median | EAR               | % < EAR |
|---------------------------------|------|------|--------|-------------------|---------|
| Vitamin D (µg)                  | 4.0  | 0.3  | 3.3    | 10µg/d            | 95.9    |
| Vitamin C (mg)                  | 118  | 9.6  | 91.9   | 80mg/d            | 43.1    |
| Dietary folate equivalents (µg) | 391  | 21.8 | 342    | 250µg/d           | 27.9    |
| Riboflavin (mg)                 | 2.4  | 0.2  | 2.0    | 1.3mg/d           | 23.4    |
| Vitamin A (µg)                  | 999  | 51.4 | 901    | 490µg/d           | 13.2    |
| Vitamin B6 (mg)                 | 3.2  | 0.2  | 2.7    | 1.3mg/d           | 9.0     |
| Vitamin B12 (µg)                | 5.4  | 0.4  | 4.5    | 1.25µg/d          | 3.6     |
| Thiamin (mg)                    | 1.2  | 0.1  | 10.6   | 0.3mg/1000kcal    | 1.5     |
| Niacin (mg)                     | 21.7 | 0.6  | 20.9   | 5.5mg NE/1000kcal | 0.0     |
| Calcium (mg)                    | 891  | 31.0 | 854    | 750mg/d           | 35.7    |
| Iodine (µg)                     | 149  | 7.2  | 137    | 95µg/d            | 23.5    |
| Iron (mg)                       | 13.5 | 0.6  | 12.2   | 7mg/d             | 5.9     |

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