

Abstract

Prevalence of Inadequacy of Micronutrient Intake in a Sample of Vegetarian and Non-Vegetarian Female Adolescents in New Zealand †

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Abstract: Appropriately planned vegetarian diets can be nutritionally adequate; however, without careful planning, some nutrients may be at risk of inadequacy, especially in adolescence, when energy and nutrient requirements are higher relative to body mass. The aim of this study was to compare intakes of at-risk micronutrients in a group of New Zealand female adolescents consuming vegetarian and non-vegetarian diets. A cross-sectional Survey of Nutrition, Dietary Assessment and Lifestyle (SuNDiAL project) was conducted among females aged 15 to 18 years, recruited from across NZ. Data were collected via an online questionnaire, and anthropometric measurements were taken to determine body mass index (BMI; kg/m²). Energy and dietary intake of calcium, iron, zinc, selenium, folate, vitamin A and vitamin B12 (B12) were determined using two 24 h recalls, adjusted to reflect usual intake. In total, 254 adolescents provided dietary intake data, comprising 38 self-identified vegetarians. The majority of the participants were NZ European and Other (NZEO) (78%), lived in neighbourhoods of low to medium deprivation (81.5%), and were a healthy weight (66.5%). Across the total sample, more than 80% did not meet the recommended intake for calcium, with values of 71% for selenium and 58% for folate. Dietary intakes among vegetarians were significantly lower than non-vegetarians, resulting in a higher prevalence of inadequacy for zinc (42% vs. 19%), selenium (92% vs. 67%) and vitamin B12 (40% vs. 16%), respectively. Vegetarians were six times more likely to have inadequate selenium intake, at a three-times-greater risk of having inadequate zinc intake and four times more likely to not meet the recommendations for B12 intake compared to non-vegetarians. In conclusion, adolescents had inadequate intakes of calcium, selenium and folate, whereas vegetarian adolescents had suboptimal intakes of selenium, zinc and B12, leading to an increased risk of deficiency.

Keywords: adolescent; vegetarian; micronutrients; dietary intake; nutrient adequacy



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