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Malnutrition among Dutch children? Results of the Dutch national food consumption survey 2012–2016

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Abstract

Introduction: An adequate and balanced intake of energy and nutrients is important for growth of children and prevention of diseases. The aim of this study was to get insight in the prevalence of low and high intakes of micronutrients and its association with overweight among Dutch children. This insight can contribute to the development of policy on healthy diet and specific nutritional information.

Materials and methods: Food and supplement consumption data of children 1–18 years ($n = 2,235$) were collected in 2012–2016 with two independent 24-hr recalls. Body Mass Index (BMI) was based on measured body height and weight for 1–15 year-olds, and self-reported values for 16–18 year-olds. Using the Dutch food and supplement composition tables, the habitual nutrient and energy intake distribution were estimated and evaluated with the dietary reference values of the Dutch Health Council. Analyses were performed for the total group as well as for classes of BMI.

Results: The intake of most micronutrients was sufficient for the children until the age of 13. No statement on this can be made for the intake of iron and vitamin D (girls). For the Dutch teenagers, low intakes of vitamin A (43%), iron (10% of the boys and 77% of the girls) and vitamin C (18%) were observed. For many other nutrients (calcium, potassium, magnesium, iron, zinc, vitamins B1, B2, B6, D, K1 and folate) the risk of low intakes among (subgroups of) teenagers were evaluated as ‘unknown’, as the median intakes were lower than the adequate intakes. In all age groups, the intakes of copper and vitamins B3 and B12 were sufficient.

At the same time, the majority of the children (72% of the boys and 50% of the girls) had a high intake of sodium and a small number of children had high intakes of zinc (7%), copper (3%) or vitamin A (4% of the boys).

17% of the children had overweight or obesity and for 9% the weight was evaluated as underweight. The prevalence of low intakes of vitamins A, D and iron was associated with BMI.

Discussion: This study suggests that the food consumption of Dutch children can be improved with a more balanced intake of energy and nutrients to prevent obesity and low and high intakes. However, not for all nutrients the health impact is clear. So, more research on the nutrient requirements among children and the related health impact is necessary.

Conflict of Interest

There is no conflict of interest