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Main sources and parental educational level differences in intake of vitamin D in Finnish preschool children

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Abstract

In Finland the recommendation for the use of vitamin D supplement is a daily supplement throughout the year for all children. It is also recommended that fluid milk products and fat spreads are fortified with vitamin D. The purpose of this study was to provide up-to-date data on children's dietary and supplemental intake of vitamin D. We also examined educational level differences in the intake and sources of vitamin D.

A cross-sectional study on the diet in Finnish 3–6-year-old preschool children (the DAGIS Study) was carried out in 2015–2016. Children were recruited in preschools in Southern Finland and in the Southern Ostrobothnia Region (n = 864). The parents reported child's supplement use (brand name, dose, frequency of use) during the last month and their own education level. The highest parental education level (PEL) was used in analysis. Parents and preschool personnel also filled in a 3-day food record for the child. A part of the families also kept an additional 2-day food record, which we sent to capture seasonal variation in the diet. In this analysis we included children (n = 794) with data for supplement use and at least 1-day food record. We calculated dietary intake based on the Fineli food composition database and created a dietary supplement database. We used Kruskal-Wallis test for statistical analysis.

Most of the children in all PELs used vitamin D supplements (low 77%, medium 85%, high 85%). Dietary supplements covered almost half of the total intake in all groups (low 42%, medium 48%, high 47%, p = 0,087). The main dietary sources of vitamin D were fortified fluid milk products, fortified fat spreads and fish dishes. A higher proportion of vitamin D was obtained from fish dishes in families with higher PEL (low 4.3%, medium 4.5%, high 6.1%, p = 0.005), but otherwise there were no differences in the proportions of the main sources. The vitamin D intake from diet and supplements was lowest in families with low PEL but the total intake of vitamin D was adequate in all groups (low 18.3, medium 20.7, high 20.7 µg/day, p = 0.001).

The use of vitamin D fortified fluid milk products and fat spreads and the vitamin D supplementation seem to ensure adequate vitamin D intake in all children, regardless the level of parental education.

Conflict of Interest

Liisa Korkalo is a board member of the company TwoDads