

Prospective study on food fortification with vitamin D among adolescent females in Finland: minor effects.

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Abstract

Vitamin D insufficiency is common particularly during winter time. After the recommendation by the Ministry of Social Affairs and Health, Finnish fluid milks and margarines have been fortified with vitamin D since February 2003. The aims of the present study were to examine the impact of vitamin D fortification of food supplies on serum 25-hydroxyvitamin D (S-25(OH)D) concentrations and on daily dietary vitamin D intake among adolescent females. One hundred and forty-two girls of Caucasian ethnicity aged 12-18 years completed semi-quantitative FFQ from which the dietary vitamin D and Ca intakes were calculated. S-25(OH)D was measured by radioimmunoassay. The study was performed from February-March 2000 to February-March 2004, one year after the initiation of fortification. The mean dietary intake of vitamin D was < 7.5 microg in 91.5 % of the adolescent girls in 2000 and 83.8 % in 2004. The midwinter mean S-25(OH)D concentration did not change significantly during the follow-up period (48.3 v. 48.1 nmol/l, NS). The proportion of participants who had S-25(OH)D concentration < 50 nmol/l was 60.6 % in 2000 and 65.5 % in 2004. Only 7.0 % of the participants had an adequate S-25(OH)D (>= 75 nmol/l) level in 2000 or 4 years later. The vitamin D fortification of fluid milks and margarines was inadequate to prevent vitamin D insufficiency. There are numerous adolescent girls and women who are not reached by the current fortification policy. Therefore new innovative and feasible ways of improving vitamin D nutrition are urged.

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