Determinants of vitamin D status in a general population of Danish adults

Background and aims: Danish legislation regarding food fortification has been very restrictive and vitamin D deficiency is thought to be common in Denmark due to inadequate dietary intakes and the fact that in Denmark (latitude 56°N) vitamin D is only synthesized in the skin after exposure to solar radiation during summertime (April–September). The purpose of this study was to evaluate the vitamin D status of a general adult population in Denmark and, in addition, associations between vitamin D status and distinct lifestyle factors were studied.

Methods: A random sample of 6784 persons from a general population aged 30–60 years participated in a health examination in 1999–2001. Serum samples from all participants were stored and levels of 25-hydroxyvitamin D (25(OH)D) were measured by HPLC in 2009. The method was compared to another HPLC method. Information on dietary intake of vitamin D and other lifestyle factors were obtained by questionnaires. A total of 6146 persons defined as ethnic Danes and with successful measurements of 25(OH)D were included in the analyses.

Results: The overall prevalence of vitamin D deficiency (25(OH)D

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