



25-hydroxyvitamin D and its predictors in Greek and Cypriot subsets of the UK Biobank Cohort

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Numerous studies show a high prevalence of vitamin D deficiency in the UK ⁽¹⁾ but similar data have been found in Greece and Cyprus, despite an abundance of UV light and skin vitamin D production being possible for almost the whole the year. ⁽²⁾ Moreover, there is no data on vitamin D status in Greek and Cypriot populations living in higher latitude countries, such as the UK. The aim of this study was to assess differences in vitamin D status and vitamin D intake between Greek/Cypriot UK residents (born in Greece or Cyprus) and a British/Irish comparison group.

A cross sectional study of n = 140 Greeks, n = 185 Cypriots and a randomly sampled group of n = 4158 British/Irish participants (self-reported ethnicity, 40–69 years old), all of whom were part of the UK Biobank cohort (baseline). Serum 25-hydroxyvitaminD (25 (OH)D) levels were measured using DiaSorin Liaison XL assay and vitamin D intake was estimated using the Oxford WebQ (24 h food frequency questionnaire).

The Greek/Cypriot group had a median 25(OH)D of 40.3 nmol/L, which was statistically significantly lower than the British/Irish group (47.6nmol/L) (P < 0.001). A total of 11% of British/Irish and 22.8% of Greek/Cypriot participants did not meet the 25nmol/L cut-off (so were deemed deficient). The 50 nmol/l cut-off point (adequate) was not met by 53.1% of British/Irish and 62.3% of Greek/Cypriot participants. Vitamin D intake was similar in the Greek/Cypriot (1.41 µg/d) and British/Irish group (1.77 µg/d) groups (P = 0.05).

The logistic regression model showed that being exposed to summer sunlight for > 30 minutes a day (OR = 0.44, (0.30 to 0.65) and having summer (OR = 0.21, (0.17 to 0.26)) or autumn (OR = 0.32, (0.26 to 0.40)) blood draw was significantly associated with lower risk of 25(OH)D 50nmol/L. Non-use of a supplement/multivitamin containing vitamin D (OR = 2.4, (2.0 to 2.9)), living in Scotland (OR = 1.50, (1.10 to 2.03) and winter blood draw (OR = 1.18, (0.94 to 1.48) were associated with increased risk of 25(OH)D <50nmol/L. Ethnicity was not a statistically significant predictor of vitamin D deficiency, with the Greek/Cypriot group having a OR of 1.18 (95% CI 0.85, 1.63) compared to the British/Irish group (reference category, OR = 1).

These results show that UK based Greek/Cypriot populations may be at higher risk of vitamin D deficiency compared to the British/Irish population, although this may result from factors other than ethnicity itself as the ethnicity result was not statistically significant when confounders were adjusted for. Results underline the need for further campaigns promoting better vitamin D intake as well as informing the UK Greek/Cypriot population of the risk of vitamin D deficiency.

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References

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