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Title: Ethnic differences in the vitamin D levels of foreign-born tuberculosis patients in south London not reflected in patients born in the UK

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Body: Vitamin D deficiency is more common in tuberculosis (TB) patients, and within certain ethnic groups. 70% of TB in the UK occurs in foreign-born persons. We investigated the roles of ethnicity and immigration on the vitamin D levels of TB patients in south London. We analysed the vitamin D levels of all patients at the time of diagnosis. We compared results by country of birth, ethnicity, age and length of residency in the UK. There were 470 patients; the mean serum 25(OH)D level was 29.1nmol/L (95% CI 27.2-31.0) and 90.6% had insufficient (<60nmol/L) 25(OH)D levels. Patients born in the Horn of Africa and Indian subcontinent had significantly lower vitamin D levels compared to patients born in the rest of Africa ($P<0.001$) and Asia ($P<0.01$). Patients born in Europe had significantly higher vitamin D levels than patients born in Africa ($P<0.05$) and Asia ($P<0.05$). Children born in the UK had the highest vitamin D levels (mean 57.4 95% CI 45.6-69.2); this was significantly more than for children born outside of the UK (mean 19.5 95% CI 12.5-26.5, $P<0.001$).

TB patients born in the horn of Africa and the Indian subcontinent have an increased risk of very low vitamin D levels. As there is little difference in ambient sunshine this raises the possibility of significant differences in diet or genetics. Children born in the UK had high levels of vitamin D not attributed to ethnicity.