



The D-VinCHI study: secondary analysis of vitamin D dietary intakes pre-2020 and post-2021

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Vitamin D is best known for its role in the prevention of rickets and osteomalacia and may have a protective role in non-communicable diseases⁽¹⁾. In the UK, low dietary intakes of vitamin D are evident in all age groups. Currently, 29–40% of children do not meet the reference nutrient intake of 10µg/day vitamin D from all dietary sources including from supplementation⁽²⁾. The COVID-19 pandemic highlighted the association between vitamin D and immune health in the popular media, this may have led to increased dietary intakes of vitamin D including from supplementation within the UK population. This study aimed to explore the vitamin D dietary intakes in children before and after the COVID-19 lockdown. A secondary analysis of the D-VinCHI study⁽³⁾ was undertaken to compare healthy children aged 4–11 years old who completed the study before the initial COVID-19 lockdown (pre-March 2020) and post-COVID-19 lockdown (post- July 2021). Daily vitamin D dietary intakes were assessed using a retrospective vitamin D food frequency questionnaire⁽⁴⁾. Contribution of different food groups to vitamin D intakes were also quantified. A total of 77 children were enrolled within the study between November 2019 and February 2022. The mean (± SD) age of participants was 8.12 (± 2.09) years and 45.5% were female. The mean (± SD) height and weight of participants were 133.36 (± 13.91) cm and 32.36 (± 11.79) kg respectively. The mean (± SD) body mass index (BMI) was 17.60 (± 3.19) kg/m². An average intake of 6.15 (± 5.01) µg/day vitamin D from all dietary sources including from supplements was reported from all participants. No significant difference was observed in mean vitamin D intakes (diet and supplements) pre-COVID (6.4 µg/day) when compared to that determined post lockdown (5.8 µg/day).

Regular vitamin D supplementation was taken in 20.8% of participants and contributed a mean (± SD) 7.3 (± 5.20) µg/day to total vitamin D intakes. In total 19.5% of participants met the reference nutrient intake of 10µg/day from all dietary sources including supplements. The results of this secondary analysis show that dietary intakes of vitamin D have not increased from 2019–2022. The dietary intakes are still well below current government recommendations and suggests that further public health strategies are required to increase intake of vitamin D from all sources including (bio)fortified, dietary and supplementation.

Implementing policies to target those at risk of low vitamin D dietary intakes may alleviate the disparities in health found in those with vitamin D deficiency.

References

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