

## **25-fold surge in vitamin D supplement prescriptions for kids in UK primary care**

*Increasingly higher doses and no prior diagnostic blood test in large number of cases*

The number of vitamin D supplement prescriptions written for children in primary care in the UK has surged 25-fold in under 10 years, reveals an analysis of family doctor (GP) prescribing data, published in the online journal **BMJ Open**.

Increasingly higher doses and an absence of a prior diagnostic blood test featured in a third to more than half of the annual prescriptions written, the analysis shows.

Vitamin D, which is usually sourced from sunlight and diet, is essential for healthy teeth, bones, and muscles. And several studies have linked low levels of the vitamin with various conditions, including diabetes, asthma, and eczema.

Yet most clinical trials have failed to show any meaningful impact of supplementation on improving health.

While severe vitamin D deficiency can cause rickets and seizures in children, it's not clear what impact vitamin D insufficiency has.

To get a handle on prescribing patterns of vitamin D supplements in primary care over time, the researchers drew on information from medical records submitted by GPs to the Health Improvement Network (THIN) between 2008 and 2016 inclusive.

The THIN database contains anonymised data from 744 general practices and around 16 million patients, equivalent to more than 6% of the UK population.

During the study period, 12, 277 children from 723 general practices were prescribed vitamin D supplements for the first time. Girls were more likely than boys to be prescribed these supplements, and prescribing rates were higher in England than elsewhere in the UK.

Older age, social deprivation, and black, Afro-Caribbean and Asian ethnicities were all associated with higher rates of vitamin D prescribing.

By 2016, the prescribing rate was more than 25 times higher than it had been in 2008, rising from 10.8 to 276.8/100,000 person years.\* This trend was particularly noticeable among 12-17 year olds, among whom girls were nearly twice as likely to be prescribed a vitamin D supplement as boys.

But increased prescribing rates occurred across all the other age groups: 0-6 months; 6 months-4 years; 4-11 years.

Overall, between 29% and 56% of prescriptions annually had no linked blood test results for vitamin D levels recorded in the 3 months before the prescription was issued.

Less than a third (29.5%) of all children prescribed the supplement had symptoms indicative of vitamin D deficiency, including aches and pains, tiredness or fatigue. Among those with no vitamin D levels recorded beforehand, symptoms were recorded for just one in six.

Prescribed doses varied greatly, with a tendency to increasingly prescribe therapeutic (pharmacological) doses to children, irrespective of their vitamin D levels.

Official guidance recommends prescribing therapeutic doses of supplementary vitamin D only to those actually diagnosed with vitamin D deficiency, note the researchers.

“There has been a marked and sustained increase in vitamin D prescribing in children in UK primary care,” write the researchers.

While this may reflect the success of the Department of Health and Social Care’s efforts in raising awareness of vitamin D deficiency, findings from our study would suggest that nationally set recommendations on vitamin D supplementation are not consistently followed by GPs, in terms of the number of patients treated, the doses used for supplementation, as well as the practice of prescribing vitamin D without appropriate testing,” they conclude.