

Vitamin D and Recommendations during the Covid 19 Pandemic – advice for Primary Care

On 23.4.20 [Public Health England](#) recommended people consider taking daily vitamin D supplements throughout the spring and summer as the coronavirus lockdown continues. Normally, most people get enough vitamin D by spending time outdoors. The skin makes it when exposed to the sun. Vitamin D, along with other vitamins, can help the body stay fit to ward off illness and infections - important features during a pandemic.

What does this mean for Primary Care?

Public Health England is concerned that people could be missing out on vitamin D during the Covid 19 pandemic when being advised to stay at home more.

It recommends vitamin D throughout the year if:

- People are not often outdoors - if housebound because they are shielding, for example
- People living in a care home
- People who usually wear clothes that cover up most of the skin when outdoors
- People with dark skin may also not be getting enough even if they spend time outdoors.

It is particularly worth taking the opportunity to discuss this with patients who may be at risk during the Covid 19 epidemic and suggesting they purchase an OTC supplement as it could reduce the risk of them developing a vitamin D deficiency.

Vitamin D supplements are available to buy over the counter at pharmacies and supermarkets and this is in line with [Oxfordshire CCG Policy 88d 'Optimising Self Care by appropriate use of Over-the-counter Medicines \(Restricted Prescribing List\).'](#)

Vitamin D supplements can be prescribed for patients with a diagnosed vitamin D deficiency (rickets, osteomalacia). More information can be found on the OCCG formulary for [adults](#) , [pregnancy](#) and [vegans or patients with a peanut or soya allergy](#).

Background on Vitamin D

The role of vitamin D has been well documented in the regulation of calcium and phosphorus metabolism and is therefore important for musculoskeletal health. It is synthesised in the skin on exposure to sunlight containing sufficient ultraviolet B (UVB) radiation and this is the main source for most people. It can also be obtained from foods (oily fish, egg yolk, liver and red meat, fortified foods such as cereals, margarine and infant formulas) or dietary supplements. Dietary sources are essential when sunlight containing UVB radiation is limited (e.g. during the winter months) or when exposure to it is restricted (e.g. due to lack of time spent outdoors or little skin exposure).

Pre Covid 19 Pandemic Recommendations for Vitamin D supplementation

In 2010, SACN agreed to review the DRVs for vitamin D because a substantial amount of published data had accumulated since its previous considerations in 2007. The [results](#) were published in 2016:

Main Recommendations:

- 1) An RNI for vitamin D, of 10 µg/d (400 IU/d), is recommended for the UK population aged 4 years and above. This is the average amount needed by 97.5% of the population to maintain a serum 25(OH)D concentration ≥ 25 nmol/L, when UVB sunshine exposure is minimal.
- 2) The RNI of 10 µg/d (400 IU/d) proposed for the general UK population (aged 4 years and above) includes pregnant and lactating women and population groups at increased risk of having a serum 25(OH)D concentration < 25 nmol/L. A separate RNI is not required for these groups.
- 3) Data was insufficient to set RNIs for infants and children aged under 4 years. As a precaution, a 'Safe Intake' of vitamin D was recommended for these ages: in the range 8.5-10 µg/d (340-400 IU/d) for ages 0 up to 1 year including exclusively breast fed and partially breast fed infants, from birth (infants having over 500mls a day of a fortified infant formula will not require supplementation); and 10 µg/d (400 IU/d) for ages 1 up to 4 years.

Recommendations for Supplementation During Covid 19 Pandemic

With the onset of the Covid 19 pandemic, questions have been raised as to the possible benefits of daily supplementation of vitamin D to the whole population as well as supplementation for patients in ITU. Vitamin D lowers the odds of developing acute respiratory tract infections which is frequently seen in patients admitted to secondary care with Covid 19 (Martineau, A R et al [Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data. BMJ 2017; 356:i6583](#) (Published 15 February 2017)). The review concluded that Vitamin D supplementation was safe and it protected against acute respiratory tract infection overall. Patients who were very deficient in vitamin D and those not receiving bolus doses experienced the most benefit.

Further research in a study by Northwestern University in the USA looked at data from Covid 19 cases in 10 countries, comparing this data with the levels of vitamin D in the population in those countries pre pandemic. The study identified a correlation between vitamin D deficiency and the complication of cytokine storm. It found that patients with a severe vitamin D deficiency were twice as likely to experience potentially lethal complications from Covid 19. Vadim Backman (professor of Biomedical Engineering) said while having high levels of vitamin D will not stop someone getting Covid 19, it may be able to reduce complications and prevent death. The study has not yet been peer reviewed or published but is available at a preprint server: [Daneshkhah, A et al 'The Possible Role of Vitamin D in Suppressing Cytokine Storm and Associated Mortality in COVID-19 Patients.'](#)

Approved by APCO 19.5.19

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