

Protocol for Vitamin D Prophylaxis during COVID-19 Pandemic

There is evidence that vitamin D supplementation enhances the function of the immune system and reduces the risk of developing respiratory infection, with a number needed to treat of 33 (1). The protective effects are strongest in those with profound vitamin D deficiency where the number needed to treat drops to eight (1). As well as this, it appears that high levels of Vitamin D reduce the severity of respiratory infection (2, 3, and 4).

People with psychosis are at particularly high risk of vitamin D deficiency. In one study in England, about half the community dwelling patients with established psychotic illness were vitamin D deficient and only 14% of patients had sufficient levels (> 20ng/ml) (5). People experiencing their first episode of psychosis are three times as likely to have vitamin D deficiency as their age, sex and ethnicity matched peers (6) People with serious mental illness also have high rates of cardiovascular disease, diabetes and metabolic syndrome (6), factors associated with poorer outcomes from COVID-19 (7).

The precise mechanism by which vitamin D exerts its protective effect against infection is unknown. Vitamin-D is nonetheless known to play a role in the immune system where it Influences antigen presentation, innate immunity and T-cell function (8). Vitamin D also affects the expression of Angiotensin Converting Enzyme 2 (ACE2), the functional receptor for the SARS-CoV-2. (9).

Vitamin D deficiency has been linked with a large number of conditions from diabetes to depression, and NICE advice is that all adults in the UK should take a daily supplement containing 400 international units (IU [10 micrograms]) of vitamin D throughout the year.

See [link](#)

NICE guidance recommendations for treatment of vitamin D deficiency see [link](#)

Recommendations

- If possible, include a request for vitamin D levels as part of the first set of routine bloods.
- Consider evidence and advice from NICE for vitamin D deficiency and prescribe if clinically indicated for individual patients. Doses may vary up to vitamin D3 4000Units per day.

Vitamin D is considered to be safe regardless of vitamin D levels but seek specialist advice if any patient meets any of the following:

- Hypercalcaemia or a history of hypercalcaemia
- History of renal stones
- History of sarcoidosis
- Renal impairment (eGFR<60mls/min) (1, 25 dihydroxy vitamin D may be needed)
- Thyroid/Parathyroid disease

- Paget's Disease
- Cancer patients

It would be advisable to monitor calcium level after the 4 weeks of treatment with vitamin D.

References

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