Health expert consortium calls for vitamin D policy in battle against COVID-19

'Evolution of evidence' links vitamin D deficiency and COVID-19 disease severity – experts say

A new article from medical experts across Ireland's leading universities outlines compelling evidence for health professionals and policymakers to revise guidance on vitamin D supplementation amidst the ongoing COVID-19 pandemic.

The position paper, published in *The Irish Journal of Medical Science*, urges policymakers to recognise the protective role of vitamin D against COVID-19 infection, encouraging a vitamin D policy to be enacted in relation to this specific issue in the absence of a current cure or safe and effective vaccine. The paper outlines how vitamin D deficiency is an easily reversible host factor that increases the risk of SARS-CoV-2 infection, after emerging evidence showed deficiency can worsen disease severity. The authors of the paper urge policymakers to re-examine whether vitamin D supplementation can significantly lessen these risks and update its public health guidance for the Irish population.

What we know about vitamin D and deficiency rates in Ireland

There are three main sources of vitamin D: sunlight, food and supplements. Research shows that the ability of the skin to produce vitamin D is compromised at northerly latitudes, especially in those who are older or in those who have a darker skin pigmentation. Vitamin D deficiency is also common in those who are obese, and in older and black populations, while deficiency may also affect infection risk and severity of virus infection through its effects on immune function. Research from the Irish Longitudinal Study on Ageing (TILDA) reports that up to 43% of adults over 50 in Ireland have insufficient vitamin D levels to counteract SARS-CoV-2 in winter and spring. Ireland's far latitude geographic location does not provide sufficient levels of vitamin D throughout the year, while previous studies have indicated that vitamin D deficiency is relatively common in Ireland and can affect all age groups.

The Covit-D Consortium also point to a number of ecological studies that found a high incidence of severe COVID-19 infection and death among groups and populations known to be at high risk of vitamin D deficiency. The paper also draws evidence from epidemiological studies that indicate a lower risk of respiratory infection and COVID-19 in those with higher vitamin D levels.

The paper calls for policymakers and health professionals to:

- Recognise the importance of enhanced vitamin D status in skeletal and extra-skeletal health, particularly in the optimisation of immune response
- Identify more adults with vitamin D deficiency through more widespread measurement of serum 25(OH)D
- Develop explicit population guidance and clinical protocols for vitamin D supplementation at effective doses outlined in the paper, as part of a comprehensive policy response to combat vitamin D deficiency and enhance the immune function and overall health of the Irish population.

- Experts recommend daily supplementation with 20–25 ug/day (800–1000 IU/day) of vitamin D3 for most of the general adult population in Ireland for the duration of the current Covid-19 pandemic

Daniel M. McCarthy, Professor of Human Nutrition and Dietetics at TU Dublin, and author of the paper said:

"The accumulation of evidence linking low vitamin D levels and COVID-19 is now considerable. This evidence includes studies which show an increased risk of infection in those with low vitamin D levels, and a 25-30-fold reduced risk of ICU admission and a roughly 90% reduced risk of death in older COVID-19 patients supplemented with vitamin D. The current pandemic has claimed over 2,000 lives in this country, and continues to pressurise our acute care system, and particularly our ICU capacity. In this context, the supplementation of adults with 20-25 micrograms of vitamin D per day (800-1000 IU/day) for the duration of this crisis is appropriate. This has been shown to be safe, and it is a simple and cost-effect way of mitigating the risks associated with COVID-19. Older adults, those who are obese and those with darker skin pigmentation may require higher dose vitamin D supplements to optimise their immune function, and these should be taken under medical supervision."

Professor Rose Anne Kenny, Principal Investigator of TILDA and co-author of the paper said:

"COVID-19 is continuing to put the lives of our most vulnerable at risk, particularly impacting older adults, and those living with diabetes, comorbidities, and weakened immune systems. Following the outbreak and spread of the virus, public health bodies in England, Scotland and Wales swiftly revised vitamin D guidance urging all adults to take a daily vitamin D supplement of at least 400 IU. We are calling on the Irish government to urgently review the evidence outlined in this paper and bring vitamin D policy in line with other European counterparts, to offer safe and effective vitamin D guidelines to benefit the health of all Irish adults."

Dr Declan Gerard Byrne Clinician at Saint James's Hospital and co-author said:

"The ongoing pandemic has resulted in over 2,000 deaths in Ireland, with roughly half of all deaths claiming the lives of vulnerable older adults. Key drivers of Ireland's widespread vitamin D deficiency rates are due to a number of contributing factors – its geographical location, a lack of policy on mandatory food fortification, and insufficient public health guidance on safe supplementation for all adults. The evidence linking vitamin D deficiency with increased risk of COVID-19 infection and disease severity has evolved rapidly since the outbreak of the virus. This paper outlines clear evidence for policymakers to update vitamin D recommendations as a matter of urgency to ensure optimal vitamin D levels are met in the Irish population."

To read the position statement from the Covit-D Consortium 'Vitamin D and SARS-CoV-2 infection—evolution of evidence supporting clinical practice and policy development', please visit here.