# Evidence Search Service Results of your search request

## In people that take Vitamin D regularly and who get infected with COVID-19, is mortality and morbidity reduced compared to people who do not take Vitamin D regularly?

**ID of request:** 23785  
**Date of request:** 15th June, 2020  
**Date of completion:** 17th June, 2020

If you would like to request any articles or any further help, please contact:  Jason Curtis at [jason.curtis1@nhs.net](mailto:jason.curtis1@nhs.net)

Please acknowledge this work in any resulting paper or presentation as: Evidence search: In people that take Vitamin D regularly and who get infected with COVID-19, is mortality and morbidity reduced compared to people who do not take Vitamin D regularly?. Jason Curtis. (17th June, 2020). SHREWSBURY, UK: Shrewsbury and Telford Health Libraries.

**Sources searched**  
Centre for Evidence-Based Medicine (1)  
EMBASE (2)

**Date range used** (5 years, 10 years): 2020 -   
**Limits used** (gender, article/study type, etc.): None   
**Search terms and notes** (full search strategy for database searches below):

Relevant natural language and controlled vocabulary terms were selected and combined. Final result sets were de-duplicated and reviewed for relevance by the searcher, irrelevant results being discarded.

Searched: PubMed, Medline, EMBASE, ClinicalTrials.gov, Centre for Evidence-Based Medicine

For more information about the resources please go to: <http://www.library.sath.nhs.uk/>.

## Summary of Results

There is no published or ongoing research on people already taking Vitamin D supplements.

The paper by Jayawardena (1) looks at previously published research on supplementation and its effects in viral respiratory infections. The paper by Grant (2) reviews a range of previous studies looking at Vitamin D supplementation and its affect on infection risk and morbidity in a range of related conditions (such as ARDs).

The synopsis by the Centre for Evidence-Based Medicine found:

'There is some evidence that daily vitamin D3 supplementation over weeks to months may prevent other acute respiratory infections, particularly in people with low or very low vitamin D status. This evidence has limitations, including heterogeneity in study populations, interventions, and definitions of respiratory infections that include upper and lower respiratory tract involvement.'

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## A. Synopses or Summaries

#### Centre for Evidence-Based Medicine

**Vitamin D: A rapid review of the evidence for treatment or prevention in COVID-19** (2020)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=5aa4332263a5eba1298db05b7bdccb8c)

We found no clinical evidence on vitamin D in COVID-19. There was no evidence related to vitamin D deficiency predisposing to COVID-19, nor were there studies of supplementation for preventing or treating COVID-19 (Search date upto 4th of April 2020, clinicaltrials.gov searched upto on 23rd April). There is some evidence that daily vitamin D3 supplementation over weeks to months may prevent other acute respiratory infections, particularly in people with low or very low vitamin D status. This evidence has limitations, including heterogeneity in study populations, interventions, and definitions of respiratory infections that include upper and lower respiratory tract involvement. The current advice is that the whole population of the UK should take vitamin D supplements to prevent vitamin D deficiency. This advice applies irrespective of any possible link with respiratory infection. Clinicians should treat patients with vitamin D deficiency irrespective of any link with respiratory infection. Policymakers should attend to public health measures to ensure the population has adequate vitamin D intake.

## B. Original Research

1. **Enhancing immunity in viral infections, with special emphasis on COVID-19: A review**  
   Jayawardena R. Diabetes and Metabolic Syndrome: Clinical Research and Reviews 2020;14(4):367-382.

Background and aims: Balanced nutrition which can help in maintaining immunity is essential for prevention and management of viral infections. While data regarding nutrition in coronavirus infection (COVID-19) are not available, in this review, we aimed to evaluate evidence from previous clinical trials that studied nutrition-based interventions for viral diseases (with special emphasis on respiratory infections), and summarise our observations. <br/>Method(s): A systematic search strategy was employed using keywords to search the literature in 3 key medical databases: PubMed, Web of Science and SciVerse Scopus. Studies were considered eligible if they were controlled trials in humans, measuring immunological parameters, on viral and respiratory infections. Clinical trials on vitamins, minerals, nutraceuticals and probiotics were included. <br/>Result(s): A total of 640 records were identified initially and 22 studies were included from other sources. After excluding duplicates and articles that did not meet the inclusion criteria, 43 studies were obtained (vitamins: 13; minerals: 8; nutraceuticals: 18 and probiotics: 4). Among vitamins, A and D showed a potential benefit, especially in deficient populations. Among trace elements, selenium and zinc have also shown favourable immune-modulatory effects in viral respiratory infections. Several nutraceuticals and probiotics may also have some role in enhancing immune functions. Micronutrients may be beneficial in nutritionally depleted elderly population. <br/>Conclusion(s): We summaries possible benefits of some vitamins, trace elements, nutraceuticals and probiotics in viral infections. Nutrition principles based on these data could be useful in possible prevention and management of COVID-19<br/>Copyright &#xa9; 2020 Diabetes India

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=818bb046a81cd97309d21463b88aa69a)

1. **Evidence that vitamin d supplementation could reduce risk of influenza and covid-19 infections and deaths**  
   Grant W.B. Nutrients 2020;12(4):No page numbers.

The world is in the grip of the COVID-19 pandemic. Public health measures that can reduce the risk of infection and death in addition to quarantines are desperately needed. This article reviews the roles of vitamin D in reducing the risk of respiratory tract infections, knowledge about the epidemiology of influenza and COVID-19, and how vitamin D supplementation might be a useful measure to reduce risk. Through several mechanisms, vitamin D can reduce risk of infections. Those mechanisms include inducing cathelicidins and defensins that can lower viral replication rates and reducing concentrations of pro-inflammatory cytokines that produce the inflammation that injures the lining of the lungs, leading to pneumonia, as well as increasing concentrations of anti-inflammatory cytokines. Several observational studies and clinical trials reported that vitamin D supplementation reduced the risk of influenza, whereas others did not. Evidence supporting the role of vitamin D in reducing risk of COVID-19 includes that the outbreak occurred in winter, a time when 25-hydroxyvitamin D (25(OH)D) concentrations are lowest; that the number of cases in the Southern Hemisphere near the end of summer are low; that vitamin D deficiency has been found to contribute to acute respiratory distress syndrome; and that case-fatality rates increase with age and with chronic disease comorbidity, both of which are associated with lower 25(OH)D concentration. To reduce the risk of infection, it is recommended that people at risk of influenza and/or COVID-19 consider taking 10,000 IU/d of vitamin D<sub>3</sub> for a few weeks to rapidly raise 25(OH)D concentrations, followed by 5000 IU/d. The goal should be to raise 25(OH)D concentrations above 40-60 ng/mL (100-150 nmol/L). For treatment of people who become infected with COVID-19, higher vitamin D<sub>3</sub> doses might be useful. Randomized controlled trials and large population studies should be conducted to evaluate these recommendations.<br/>Copyright &#xa9; 2020 by the authors. Licensee MDPI, Basel, Switzerland.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=088bec5eef1f4ba3cf6d53807edc7471)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=f84744f74990a021a9e01e2185e5ef66)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=737d6426591f8fc0f8e276d4135ee713)

### Opening Internet Links

The links to internet sites in this document are 'live' and can be opened by holding down the CTRL key on your keyboard while clicking on the web address with your mouse

### Full text papers

Links are given to full text resources where available. For some of the papers, you will need an **NHS OpenAthens Account**. If you do not have an account you can [register online](https://openathens.nice.org.uk/).

You can then access the papers by simply entering your username and password. If you do not have easy access to the internet to gain access, please let us know and we can download the papers for you.

### Guidance on searching within online documents

Links are provided to the full text of each document. Relevant extracts have been copied and pasted into these results. Rather than browse through lengthy documents, you can search for specific words as follows:

**Portable Document Format / pdf / Adobe**  
Click on the Search button (illustrated with binoculars). This will open up a search window. Type in the term you need to find and links to all of the references to that term within the document will be displayed in the window. You can jump to each reference by clicking it.

**Word documents**  
Select Edit from the menu, the Find and type in your term in the search box which is presented. The search function will locate the first use of the term in the document. By pressing 'next' you will jump to further references.

## C. Search History

|  | **Source** | **Criteria** | **Results** |
| --- | --- | --- | --- |
| 1. | Medline | ("Vitamin D\*" OR "vit d\*" OR colecalciferol).ti,ab | 67770 |
| 2. | Medline | exp "VITAMIN D"/ | 58552 |
| 3. | Medline | (1 OR 2) | 86119 |
| 4. | Medline | exp CORONAVIRUS/ | 16153 |
| 5. | Medline | exp "CORONAVIRUS INFECTIONS"/ | 15312 |
| 6. | Medline | (coronavirus OR "corona virus" OR covid19 OR covid-19 OR wuhan OR hubei OR "novel coronavirus" OR "2019-nCoV" OR "SARS-Cov").ti,ab | 36025 |
| 7. | Medline | (4 OR 5 OR 6) | 43785 |
| 8. | Medline | (3 AND 7) | 66 |
| 9. | PubMed | ("Vitamin D\*" OR "vit d\*" OR colecalciferol).ti,ab | 84599 |
| 10. | PubMed | (coronavirus OR "corona virus" OR covid19 OR covid-19 OR wuhan OR hubei OR "novel coronavirus" OR "2019-nCoV" OR "SARS-Cov").ti,ab | 136633 |
| 11. | PubMed | (9 AND 10) | 220 |
| 13. | EMBASE | ("Vitamin D??" OR "vit d??" OR colecalciferol).ti,ab | 99394 |
| 14. | EMBASE | exp "VITAMIN D"/ | 140761 |
| 15. | EMBASE | exp CORONAVIRUS/ | 14519 |
| 16. | EMBASE | exp "CORONAVIRUS INFECTIONS"/ | 14239 |
| 17. | EMBASE | (coronavirus OR "corona virus" OR covid19 OR covid-19 OR wuhan OR hubei OR "novel coronavirus" OR "2019-nCoV" OR "SARS-Cov").ti,ab | 36440 |
| 18. | EMBASE | (13 OR 14) | 157136 |
| 19. | EMBASE | exp CORONAVIRUS/ | 14519 |
| 20. | EMBASE | exp "CORONAVIRUS INFECTIONS"/ | 14239 |
| 21. | EMBASE | (coronavirus OR "corona virus" OR covid19 OR covid-19 OR wuhan OR hubei OR "novel coronavirus" OR "2019-nCoV" OR "SARS-Cov").ti,ab | 36440 |
| 22. | EMBASE | (19 OR 20 OR 21) | 47136 |
| 23. | EMBASE | (15 OR 16 OR 17) | 47136 |
| 24. | EMBASE | (13 OR 14) AND (15 OR 16 OR 17) | 104 |
| 25. | PubMed | (supplement\*).ti,ab | 344343 |
| 26. | PubMed | (11 AND 25) | 44 |

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