

Vitamin D supplementation to prevent acute respiratory infections: individual participant data meta-analysis

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Plain English summary

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Research question

Does taking a vitamin D supplement help to prevent colds, flu and chest infections?

Background

Low blood levels of vitamin D (the 'sunshine vitamin') have been linked to an increased risk of colds, flu and chest infections, collectively termed 'acute respiratory infections' (ARIs). Clinical trials testing whether or not vitamin D supplements can prevent ARIs have had mixed results. The reason why vitamin D appears to work in some situations but not others is not understood. In order to answer this question, we obtained data from individuals who took part in previous clinical trials, combined them and analysed them to answer two questions:

1. Does vitamin D reduce the overall risk of ARIs, broadly defined?
2. Do some people benefit more from taking vitamin D than others?

Included studies

We obtained raw data on a total of 10,933 people from 25 trials conducted in 15 countries. Participants were aged from 0 to 95 years. All of the studies compared vitamin D with placebo (dummy medication), which is the gold standard trial design.

Key results

Overall, vitamin D supplements reduced the risk of having at least one ARI from 42% to 39%. We also showed that vitamin D had greater protective effects when it was given daily or weekly to people with the lowest vitamin D levels: the risk of having at least one ARI was reduced from 60% to 32% in these individuals. Vitamin D was not effective in protecting against ARIs when it was given in large, widely spaced doses. Taking vitamin D supplements was found to be safe.

Conclusion

Taking a vitamin D supplement can protect against ARIs. The strongest effects are seen when a daily or weekly supplement is given to people with the lowest vitamin D levels.

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This report

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