# Vitamin C does not prevent colds but vitamins A and D support immunity, say experts



The notion that vitamin C can shield us from the common cold has pervaded popular wisdom for decades, often supported by vivid memories of mothers urging their children to drink orange juice at the first sign of a sniffle. Yet, the scientific consensus suggests that this belief may not hold up under scrutiny.

Despite its well-known role as a powerful antioxidant and its importance in various biological processes—from collagen production to iron absorption—research indicates that vitamin C is not a cure-all for the common cold. The initial enthusiasm for vitamin C’s cold-fighting properties can be traced back to the 1960s and the claims of Linus Pauling, a two-time Nobel Prize winner. Pauling famously promoted the benefits of megadosing on vitamin C, suggesting that his regimen kept him healthy. Distorted by selective readings of scientific studies and popular publications, this narrative laid the groundwork for a belief that persists today.

However, recent systematic reviews have challenged the enduring myth surrounding vitamin C. Analysis of multiple studies involving thousands of participants showed that while regular vitamin C supplementation does not prevent cold infections, it can indeed reduce the duration of symptoms—by approximately 8% in adults and 14% in children. Hence, those relying on vitamin C should not expect immunity from colds but can anticipate a slightly quicker recovery if they maintain regular intake.

In contrast, research highlights other vitamins that genuinely contribute to immune health. Vitamins A and D, both essential for optimal immune function, play distinct and crucial roles. Vitamin D, produced by the body in response to sunlight, aids in the suppression of overactive immune cells once infections are resolved—a mechanism critical for preventing autoimmune diseases. Studies have noted that sufficient vitamin D levels are associated with reduced risks of respiratory infections, supporting claims made in government health recommendations to supplement vitamin D, particularly during the winter months when sunlight exposure is limited.

Vitamin A is similarly vital for immune system functionality, influencing the development of multiple immune cells and promoting the production of mucus—a natural barrier against invading pathogens. For most individuals, a balanced diet suffices to maintain adequate vitamin A levels, as it is readily available in various foods such as carrots and eggs.

Amidst the hustle of immune-boosting purchases, probiotic products have gained notable traction, with many yoghurts claiming to enhance immunity. While some research suggests that specific strains of probiotics can positively influence the gut microbiome and, potentially, the immune system, the evidence remains inconsistent. Notably, randomised control trials have demonstrated beneficial impacts, including an increase in regulatory T cells—important components in maintaining immune system balance.

However, the complexity of immune responses cannot be underestimated. Factors such as obesity have been shown to skew immune function, amplifying inflammation and making the body more vulnerable to infections. Excess body fat contains numerous immune cells that, when active, can create a landscape of constant inflammation detrimental to health. Conversely, undernutrition undermines the immune response, leading to heightened risks of infections.

Lifestyle factors such as sleep and exercise also significantly affect immune health. Poor sleep patterns disrupt hormonal balance which compounds immune malfunctions, while moderate exercise can enhance immune efficiency—though caution is warranted during periods of illness. Heavy exercise when sick may divert energy away from the immune response, countering any potential benefits of physical activity.

As our understanding of immunity evolves, it is vital to separate scientifically validated methods from entrenched myths. While vitamin C serves its purpose as a dietary supplement, it should not be relied upon as a panacea for cold prevention. Instead, focusing on a holistic approach—incorporating adequate nutrients from varied food sources, maintaining healthy lifestyle habits, and managing stress—will serve individuals far better in building robust immune systems capable of tackling a range of health challenges.

## Reference Map:

* Paragraph 1 – [[1]](https://www.dailymail.co.uk/health/article-14753635/Why-vitamin-C-DOESNT-cure-colds-two-boost-immunity.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[2]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8078152/)
* Paragraph 2 – [[3]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6124957/), [[4]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2907967/)
* Paragraph 3 – [[5]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3275147/), [[6]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8568032/)
* Paragraph 4 – [[6]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8568032/), [[7]](https://www.ncbi.nlm.nih.gov/books/NBK230968/)
* Paragraph 5 – [[1]](https://www.dailymail.co.uk/health/article-14753635/Why-vitamin-C-DOESNT-cure-colds-two-boost-immunity.html?ns_mchannel=rss&ns_campaign=1490&ito=1490)
* Paragraph 6 – [[1]](https://www.dailymail.co.uk/health/article-14753635/Why-vitamin-C-DOESNT-cure-colds-two-boost-immunity.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[5]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3275147/)
* Paragraph 7 – [[3]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6124957/)
* Paragraph 8 – [[6]](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8568032/), [[1]](https://www.dailymail.co.uk/health/article-14753635/Why-vitamin-C-DOESNT-cure-colds-two-boost-immunity.html?ns_mchannel=rss&ns_campaign=1490&ito=1490)
* Paragraph 9 – [[7]](https://www.ncbi.nlm.nih.gov/books/NBK230968/)

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## Bibliography

1. <https://www.dailymail.co.uk/health/article-14753635/Why-vitamin-C-DOESNT-cure-colds-two-boost-immunity.html?ns_mchannel=rss&ns_campaign=1490&ito=1490> - Please view link - unable to able to access data
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8078152/> - This review examines the effects of vitamin C on the common cold, analysing 29 trials involving over 11,000 participants. The study found that while vitamin C supplementation did not prevent colds, it modestly reduced the duration of symptoms by approximately 8% in adults and 14% in children. The review suggests that vitamin C may be beneficial in reducing the severity and duration of cold symptoms, particularly in individuals under high physical stress.
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6124957/> - This article discusses the role of vitamin C in preventing and treating the common cold. It highlights that while vitamin C supplementation does not prevent colds, it can reduce the duration and severity of symptoms. The article also notes that the effectiveness of vitamin C may be more pronounced in individuals exposed to brief periods of severe physical stress, such as marathon runners and skiers.
4. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2907967/> - This systematic review evaluates the impact of vitamin C on the common cold. The findings indicate that vitamin C does not significantly reduce the severity or duration of cold symptoms compared to a placebo. The review concludes that vitamin C is unlikely to be effective in treating the common cold.
5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3275147/> - This systematic review assesses the effects of vitamin C on the common cold. The study found that vitamin C supplementation does not significantly reduce the severity or duration of cold symptoms compared to a placebo. The review suggests that vitamin C is unlikely to be effective in treating the common cold.
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8568032/> - This article explores the role of vitamins A and D in modulating the immune response, with a focus on innate lymphoid cells. It discusses how vitamin A and its metabolites influence the balance between Th1 and Th2 immunity, and how vitamin D exerts protective effects on the innate immune system while inhibiting adaptive immunity.
7. <https://www.ncbi.nlm.nih.gov/books/NBK230968/> - This chapter discusses the role of vitamin A in immune function, highlighting that deficiency in vitamin A can lead to immunodeficiency disorders. It explains how vitamin A deficiency is associated with increased susceptibility to infections and how supplementation can improve immune responses, particularly in children.