

The missing test: Vitamin D, recurrent respiratory infection, and an overlooked workplace equity issue

Moyez Jiwa

Carlton, VIC, Australia

SUMMARY

This editorial argues that Vitamin D deficiency—more common in people with darker skin and in low-sunlight climates—contributes to weakened immunity and worse outcomes from upper respiratory tract infections (URTIs), which already cause substantial morbidity, absenteeism, and productivity loss. Despite this link, current guidelines advise against routinely testing vitamin D levels even in high-risk groups presenting with URTIs. This clinical gap may compound existing workplace inequities, since people of colour already face greater scrutiny for taking sick leave. Left untreated, deficiency-related prolonged illness may force affected employees to choose between criticised absenteeism or presenteeism—though this intersection remains an inference requiring further study.

Key Words: Vitamin D deficiency, Respiratory tract infections, Absenteeism, Presenteeism, Healthcare disparities

To Cite: Jiwa M. The missing test: Vitamin D, recurrent respiratory infection, and an overlooked workplace equity issue. JHD. 2026;11(1):806–809. <https://doi.org/10.21853/JHD.2026.360>

Corresponding Author: Moyez Jiwa (moyezjiwa@gmail.com): General Practitioner, Carlton, VIC, Australia

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The medical literature documents a higher risk for Vitamin D deficiency in people with darker skin.¹ What is less often a focus is the impact of such a deficiency on the well-being of those most at risk of Vitamin D deficiency in geographies where average sunshine is lower than in summer months.² Vitamin D deficiency mainly disrupts calcium and phosphate regulation, leading to weakened, softened bones—causing rickets in children and osteomalacia in adults, along with an increased risk of fractures and osteoporosis.³ It is also linked to muscle weakness and pain, a higher susceptibility to infections due to impaired immune function, and has been associated (though less conclusively) with fatigue, mood disturbances like depression, and increased cardiovascular risk.³

The impact on immune function warrants particular attention, especially in countries with cooler climates that have months with fewer hours of sunshine.⁴ At this time the risk of developing a viral upper respiratory tract infection is significant.⁵ The morbidity associated with a viral upper respiratory tract infection (URTI) has also been shown to be substantial and not merely a minor irritation or inconvenience. Most people get up to two URTIs per year with about a third lasting for 4–6 days. Some 70 per cent of people rely upon/get help from healthcare providers. Multi-symptom (66 per cent), cough (58 per cent), and nasal congestion (38 per cent) are the most frequently reported.⁶ Over-the-counter medicines are used when suffering from a URTI. Sleep and its role in recovery is well accepted though not well understood, and good sleep quality is sought by many sufferers. URTIs affect the whole family unit in terms of overt infection and care required.⁶

It is likely that patients will seek time off work where possible and that loss of productivity in the economy is considerable.⁷ The response and recovery of an individual with a URTI is moderated by a number of factors, including and especially their previous fitness and well-being.⁸ It has been suggested that, among

other factors, the recovery rate from a URTI is impacted by changes in speed of memory and mood. Even without fever, infectious disease produces large disturbances in speed of cognitive processing, particularly that reflecting retrieval from memory, and these effects are more marked in some individuals. URTIs also affect mood.⁹ In addition to the seasonal rise in infections in the community, other factors make individuals more prone to a URTI, including the level of Vitamin D.¹⁰ In addition, it has been postulated for decades that the quality of a person's social interactions make them more or less vulnerable to a cold. Sociability, a highly heritable characteristic, is partly determined by a gene or genes that contribute to sociability but at the same time contribute to biological processes that play a role in the body's ability to fight off infection.¹¹ Sociability is a relevant factor because people who already live with racial prejudice—and therefore social stress—are also more prone to Vitamin D deficiency.¹²

Therefore, URTIs are associated with significant morbidity, and they are more prevalent in the winter months. Those who are susceptible may have poor fitness, poor social interactions, and Vitamin D deficiency. The rate of recovery from a URTI can be variable.¹³ People who are living with a URTI are likely to take time off work. In one study productivity decreased by a mean 26.4 per cent, and 44.5 per cent of respondents reported work/school absenteeism (usually 1–2 days) during a cold.¹⁴ People of colour have been reported as finding it more difficult to justify taking time off work.¹⁵ Whether a doctor feels that it is justified that an employee takes time off work depends on the severity of their symptoms, the scope that they may be infectious, and their general well-being. Those with a Vitamin D deficiency are more likely to be unwell and have a prolonged illness. Despite an established link between Vitamin D status and respiratory infection risk, Vitamin D levels are not routinely checked in patients presenting with URTIs—including those in recognised high-risk groups (eg, those with dark skin or with obesity)—as current guidelines advise against routine testing, even in these populations.^{16,17}

Taken together, these findings suggest a gap in current clinical practice with consequences that extend beyond individual health outcomes. Because Vitamin D levels are not routinely assessed in patients presenting with URTIs—even among those in recognised high-risk groups—an underlying, modifiable contributor to recovery time and recurrent illness may go unaddressed. This is not merely a clinical oversight: it could plausibly compound the disproportionate scrutiny already documented for certain workers, particularly people of colour, who face harsher judgement for taking time off and heightened pressure to appear reliable and uncomplaining in the workplace. Where the healthcare system fails to identify and treat a correctable cause of prolonged or recurrent respiratory illness, affected patients may be left with little choice but to either take repeated absences—inviting the criticism and career risk documented above—or engage in presenteeism, attending work while unwell.

It should be emphasised that the specific intersection between this clinical testing gap and workplace bias has not been directly studied, and represents an inference drawn from two separate bodies of evidence rather than an established causal pathway; nonetheless, the plausibility of this convergence, and its potential to compound disadvantage for already-vulnerable employees, warrants further empirical investigation. A gap in routine clinical assessment does not exist in isolation—it may intersect with, and potentially exacerbate, existing workplace inequities, leaving employees to absorb the cost of a preventable clinical done to improve outcomes in healthcare. This issue could help address both morbidity and racism.

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ACKNOWLEDGEMENTS

None

PEER REVIEW

Not commissioned. Externally peer reviewed.

CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

FUNDING

None

ETHICS COMMITTEE APPROVAL

N/A