



Rethinking dementia prevention: what the new WHO guidelines get right (and what they left behind)

Nicola Veronese^{1,2} · Stefania Maggi³

Accepted: 24 July 2026
© The Author(s) 2026

The World Health Organization (WHO) recently released its updated, second edition guidelines on reducing the risk of cognitive decline and dementia [1]. In an era where more than 57 million people are living with dementia globally—a figure projected to surge dramatically over the coming decades—the document represents a critical and timely milestone in public health policy. Without a universally accessible cure on the immediate horizon [2], primary prevention across the life course remains our most powerful weapon against a global health systems crisis.

The revised guidance offers a refined roadmap for clinical practice and public health planning. Crucially, it moves beyond a narrow, single-domain view of brain health to embrace a holistic, life-course framework. Up to 45% of dementia cases are tied to modifiable risk factors [3], ranging from midlife hypertension and diabetes to environmental exposures like air pollution. By formalizing evidence for multidomain interventions—combining physical movement, cognitive engagement, and metabolic care—the WHO provides actionable strategies for health systems worldwide.

Yet, alongside these pivotal advancements, a striking gap emerges when evaluating the broader landscape of preventive medicine: the primary prevention of dementia via routine vaccinations.

Vaccinations are universally recognized as cornerstone interventions for preserving function and reducing mortality in older adults [4]. Beyond protecting against targeted infectious pathogens, a robust and growing body of clinical

evidence indicates that recommended adult immunizations play a significant role in mitigating cardiovascular events and long-term neurocognitive decline [5].

Recent comprehensive clinical practice guidelines—such as the 2026 Canadian Cardiovascular Harmonized National Guideline Endeavour (C-CHANGE) consensus—explicitly highlight the cognitive and neurovascular protective benefits of routine adult vaccines [6]. Briefly:

- **Influenza Vaccination:** Routinely offered to older adults, influenza vaccination has been shown to reduce cardiovascular mortality and stroke, alongside observational evidence indicating a reduced risk of incident dementia [7].
- **Herpes Zoster (Shingles) Vaccination:** Emerging population-level data link zoster vaccination to a lower incidence of major cardiovascular events and a statistically significant reduction in overall dementia and Alzheimer's disease diagnosis [8].
- **Pneumococcal Vaccination:** Demonstrates clear protective effects against myocardial infarction and stroke in older populations, indirectly shielding the brain from vascular damage that fuels cognitive decline [9].

Despite these findings, the WHO guidelines contain no specific recommendation or statement regarding vaccinations as a strategy for the primary prevention of dementia.

The rationale for this omission likely stems from strict methodological boundaries. Under standard GRADE frameworks, evidence derived from observational cohort studies—where much of the dementia-vaccine data currently sits—is inherently rated as low or very low certainty: the same guidelines cited before [6] rated the evidence about vaccinations and dementia as Class IIIc. At the same time, we would like to observe that several other factors mentioned in the WHO guidelines are mainly based on

✉ Nicola Veronese
nicola.veronese@unicamillus.org

¹ Faculty of Medicine, Saint Camillus University, Via Sant'Alessandro, 100161 Rome, Italy

² Primary Care Department, Unità Locale Socio-Sanitaria 3 "Serenissima", Venice, Italy

³ National Research Council (CNR), Aging Branch - Institute of Neuroscience, Padua, Italy

observational data [1]. Because conducting randomized controlled trials (RCTs) that withhold recommended vaccines from older adults for decades would be ethically unfeasible, high-certainty trial data directly linking vaccination to primary dementia reduction remains difficult to generate.

While the WHO Secretariat's cautious approach aligns with formal guideline development standards, this omission is a critical gap that creates a potential disconnect for front-line clinicians.

From a pathological standpoint, neuroinflammation and vascular damage are indeed recognized as primary, intertwined drivers of neurodegeneration. Systemic infections like influenza, shingles, and pneumococcal pneumonia trigger severe inflammatory cascades and vascular stress, that form a self-perpetuating feedback loop that directly accelerates neuronal death, synaptic dysfunction, and cognitive decline in vulnerable brains. Preventing these systemic shocks through routine immunization represents a low-cost, low-risk, and widely available intervention that inherently supports brain health. Moreover, as pointed out by a recent meta analysis of our group, several vaccinations seem to be associated with a lower risk of dementia (including its subtypes), making again this topic a vital clinical focus [10].

In conclusion, the second edition of the WHO guidelines is an indispensable step forward, equipping global health systems with evidence-based targets to reshape the trajectory of cognitive decline. Its emphasis on structural risk factors, early midlife intervention, and multidomain care provides a vital blueprint for healthy aging. However, as we translate these public health guidelines into clinical call to action, care providers must avoid viewing brain health in a silo. While the WHO guidelines may omit immunizations due to strict evidentiary criteria regarding primary dementia endpoints, clinicians should firmly remember that keeping older adults up to date on routine vaccinations remains an essential, evidence-backed line of defense for both cardiovascular and cognitive vitality.

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to

the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Organization WH (2026) Risk reduction of cognitive decline and dementia. WHO guidelines, second edition. World Health Organization. <https://www.who.int/health-topics/dementia> Accessed 07/22/2026
2. Zuliani G, Zuin M, Romagnoli T, Polastri M, Cervellati C, Brombo G (2024) Acetyl-cholinesterase-inhibitors reconsidered. A narrative review of post-marketing studies on Alzheimer's disease. *Aging Clin Exp Res* 36:23
3. Livingston G, Huntley J, Liu KY, Costafreda SG, Selbæk G, Alladi S, Ames D, Banerjee S, Burns A, Brayne C (2024) Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. *The Lancet*
4. Veronese N, Ragusa FS, Titone PR, Vernuccio L, Catanese G, Randazzo MA, Palermo M, Di Bella G, Mansueto P, Dominguez LJ (2024) Management of the vaccination campaign in a population of frail older outpatients affected by cognitive or endocrinological conditions: a pilot study in Italy. *Aging Clin Exp Res* 36:179
5. Johansen ND, Modin D, Pardo-Seco J, Rodriguez-Tenreiro-Sánchez C, Loiacono MM, Harris RC, Dufournet M, van Aalst R, Chit A, Larsen CS (2026) High-dose versus standard-dose influenza vaccine and cardiovascular outcomes in older adults: the FLUNITY-HD prespecified pooled analysis. *Circulation* 153:798–806
6. Edwards JD, Li Z, McFarlane P, Rabi DM, Gilbert J, Bajaj HS, MacIntosh BJ, Bittman J, Feldman RD, Dresser G (2026) Management of brain–heart multimorbidity: a clinical practice guideline. *Can Med Assoc J* 198:E425–E439
7. Veronese N, Demurtas J, Smith L, Michel JP, Barbagallo M, Bolzetta F, Noale M, Maggi S (2022) Influenza vaccination reduces dementia risk: A systematic review and meta-analysis. *Ageing Res Rev* 73
8. Eyting M, Xie M, Michalik F, Heß S, Chung S, Geldsetzer P (2025) A natural experiment on the effect of herpes zoster vaccination on dementia. *Nature* 641:438–446
9. Harris K, Ling Y, Bukhbinder AS, Chen L, Phelps KN, Cruz G, Thomas J, Kim Y, Jiang X, Schulz PE (2023) The impact of routine vaccinations on Alzheimer's disease risk in persons 65 years and older: a claims-based cohort study using propensity score matching. *J Alzheimer's Disease* 95:703–718
10. Maggi S, Fulöp T, De Vita E, Limongi F, Pizzol D, Di Gennaro F, Veronese N (2025) Association between vaccinations and risk of dementia: a systematic review and meta-analysis. *Age Ageing* 54:afaf331

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.