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Austin Health

University of Melbourne

IMMUNISATION COALITION

Beyond vaccinating against specific diseases: prevention benefits of other diseases

Masterclass 2026

Why is life-course immunisation important?
To increase healthy lives and wellbeing in the population

Life-course immunisation, along with appropriate lifestyle and healthcare interventions, provides an opportunity to live and age in good health[1,2]

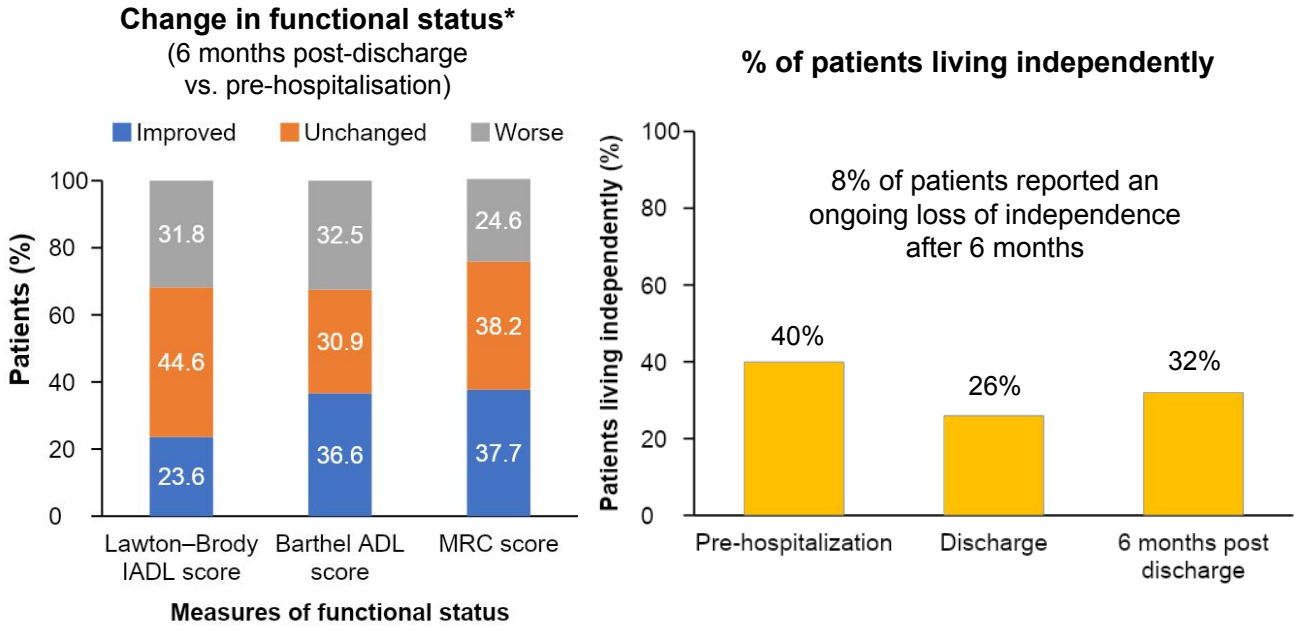
WHO, World Health Organization

1. Global Coalition on Aging, 2013. Life-course immunization: a driver of healthy aging. http://www.globalcoalitiononaging.com/v2/data/uploads/documents/life-course-immunization_gcoa-for-web.pdf (accessed November 2016);
2. WHO, 1999. A life course perspective of maintaining independence in older age. whqlibdoc.who.int/hq/1999/WHO_HSC_AHE_99.2_life.pdf (accessed December 2016)

Long-term impact of RSV infection: preventing frailty and dependence

RSV can have a considerable long-term impact on the functional status and quality of life of older adults

Functional status was evaluated for adults aged ≥60 years, hospitalised with confirmed RSV, New York State, USA, 2017–2020[1]
(Median age, 74 years)



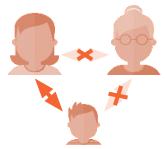
Older adults hospitalised with RSV showed acute functional decline, with approximately one third demonstrating a persistent decline at 6 months post-discharge

Among adult patients† hospitalised with RSV-ARI (mean age = 67.3 years)[2]:

- Up to 24.5% required professional home care[2]
- Up to 26.6% required readmission within 3 months post discharge[2]

Among hospitalised patients with RSV aged ≥75 years:

- Mortality rate within a year of admission was almost 33%[3]



RSV infection in adults aged ≥50 years was associated with adverse effects on productivity; social or leisure activities; relationships; emotional, physical or cognitive functioning; and sleep[4]

These effects were observed in those with an RSV diagnosis in the preceding 6 months[4]

*Comparison of patients with paired pre-hospitalisation and 6-month scores, n=224. †Adults aged ≥18 years
ADL, activities of daily living; ARI, acute respiratory infection; IADL, instrumental activities of daily living; MRC, (UK) Medical Research Council
Graphs were independently created for GSK from the original data

1. Branche A *et al. Influenza Other Respi Viruses* 2022;16:1151–1160; 2. Falsey AR *et al. Open Forum Infect Dis* 2021;8:11, ofab491; 3. Tseng HF *et al. J Infect Dis* 2020;222:1298–1310;
4. Curran D *et al. Influenza Other Respir Viruses* 2022;16:462–473

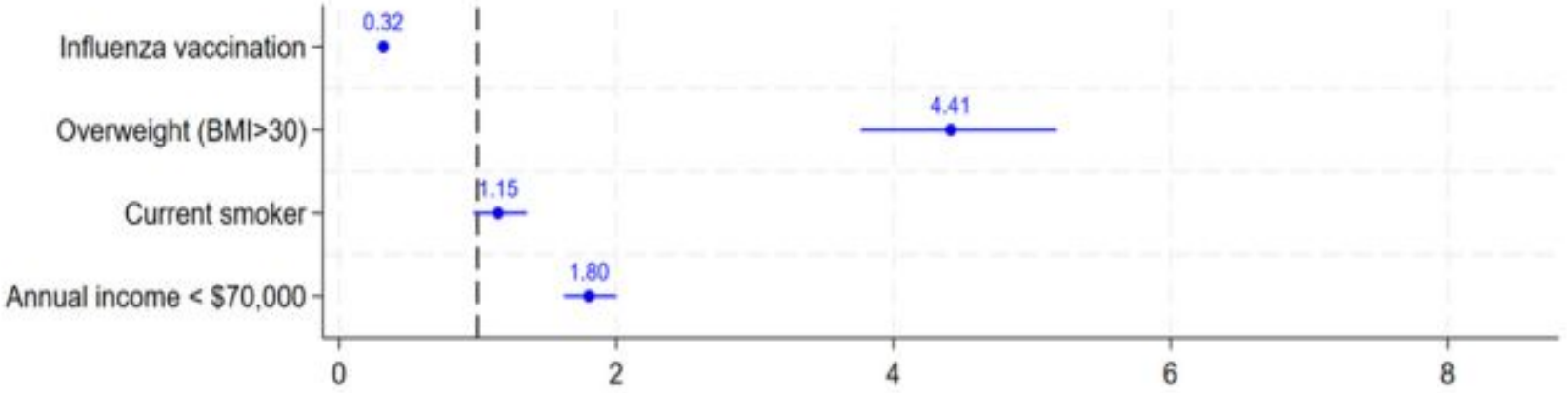
But are there other benefits of vaccination?

…..beyond prevention of the disease the vaccine targets, and improved quality of life

Let’s look at Cardiovascular Disease
-remember 2017 was a bad flu season

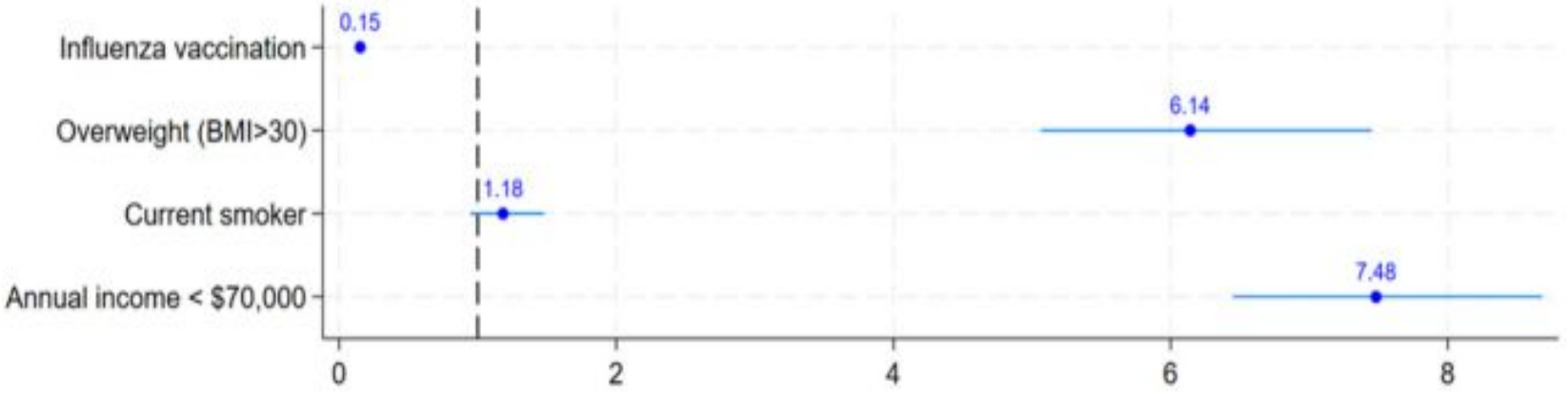
Risk factors for cardiovascular admissions among residents aged ≥50 years in NSW, Australia during 2017

Univariate



	Odds ratio, OR (95% CI)	P-value
Influenza vaccination	0.32 (0.29 to 0.35)	<0.001
Overweight (BMI>30)	4.41 (3.76 to 5.18)	<0.001
Current smoker	1.15 (0.97 to 1.36)	0.108
Annual income < $70,000	1.80 (1.62 to 2.00)	<0.001

Multivariate

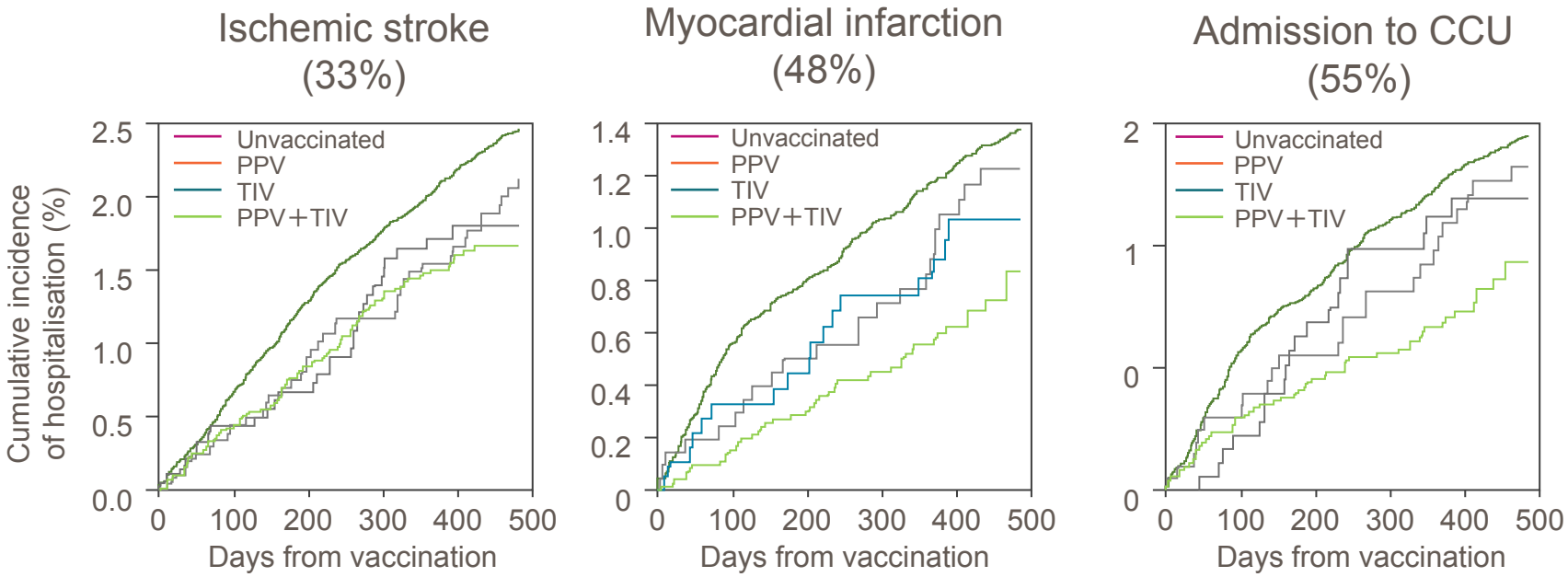


	Adjusted Odds ratio, aOR (95% CI)	P-value
Influenza vaccination	0.15 (0.13 to 0.17)	<0.001
Overweight (BMI>30)	6.14 (5.06 to 7.45)	0.001
Current smoker	1.18 (0.95 to 1.48)	0.142
Annual income < $70,000	7.48 (6.45 to 8.68)	<0.001

Prevention of Cardiovascular Diseases with Standard-Dose Quadrivalent Influenza Vaccine in People Aged ≥50 Years in Austra During the 2017 A/H3N2 Epidemic. Akhtar et al. *Vaccines* **2025**, *13*(4), 407; **https://doi.org/10.3390/vaccines13040407**

Vaccination in older adults can reduce disease-associated complications, reducing healthcare burden and mortality[1]

Pneumococcal and influenza vaccination protects against vascular events, reducing overall healthcare burden



Complications

Cardiac/coronary care unit admissions

A prospective cohort study of outpatients aged ≥65 years with chronic illness in Hong Kong, China who participated in a PPV and TIV vaccination programme. Study was conducted from Dec 2007–Jun 2008, with all patients followed until Mar 2009. Of 36,636 subjects recruited, 7292 received both PPV and TIV, 2076 received TIV vaccine alone, 1875 received PPV alone, and 25,393 were unvaccinated. The primary outcome was the rate of death due to the following: pneumonia, COPD, asthma, influenza-like illness, ischaemic stroke, AMI and cardiac failure at Week 64. Compared with the unvaccinated group, PPV + TIV vaccinees had: (a) a 33% reduction in ischaemic stroke (HR: 0.67; 95% CI: 0.54–0.83; *P*<0.001); (b) a 48% reduction in AMI (HR: 0.52; 95% CI: 0.38–0.71; *P*<0.001); (c) a 41% reduction in the rate of coronary care unit admission (HR: 0.59; 95% CI: 0.44–0.79; *P*<0.001)

AMI, acute myocardial infarction; COPD, chronic obstructive pulmonary disease; HR, hazard ratio; PPV, pneumococcal polysaccharide vaccine; TIV, trivalent influenza vaccine

Figures adapted from Hung IFN *et al*. *Clin Infect Dis* 2010;51:1007–1016, with permission from Oxford University Press

The European Society of Cardiology in 2024, followed by the American College of Cardiology/American Heart Association and the National Heart Foundation of Australia and New Zealand in 2025, now recommend influenza vaccination for all patients with acute coronary syndrome (ACS):

1. Byrne RA, Rossello X, Coughlan JJ, Barbato E, Berry C, Chieffo A, et al. Correction to: 2023 ESC Guidelines for the management of acute coronary syndromes: Developed by the task force on the management of acute coronary syndromes of the European Society of Cardiology (ESC). Eur Heart J-Acute Ca. 2024;13(5):455.
2. Rao SV, O'Donoghue ML, Ruel M, Rab T, Tamis-Holland JE, Alexander JH, et al. 2025 ACC/AHA/ACEP/NAEMSP/SCAI Guideline for the Management of Patients With Acute Coronary Syndromes: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Circulation. 2025;151(13):e771-e862.
3. Brieger D, Cullen L, Briffa T, Zaman S, Scott I, Papendick C, et al. National Heart Foundation of Australia & Cardiac Society of Australia and New Zealand: Comprehensive Australian Clinical Guideline for Diagnosing and Managing Acute Coronary Syndromes 2025. Heart Lung Circ. 2025;34(4):309-97.

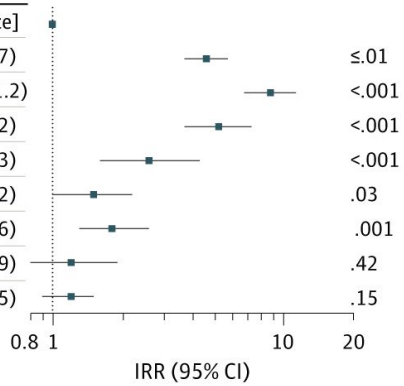
Risk of Cardiovascular Events

Following RSV-related hospitalisation

Incidence Rate Ratios (IRRs) of Cardiovascular Events Among Patients With Respiratory Syncytial Virus (RSV)–Related Hospitalisation

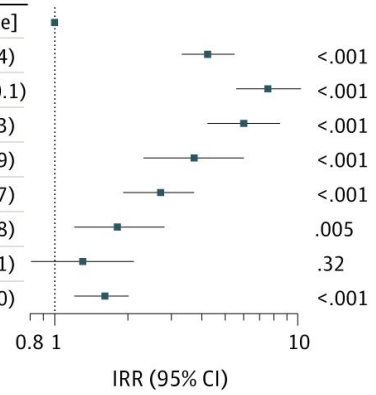
A Myocardial infarction

Period	No. of events	IRR (95% CI)	*P* value
Control	1572	1 [Reference]	
Buffer: -21 to -1 d	90	4.6 (3.7-5.7)	≤.01
Risk: 1-7 d	66	8.7 (6.7-11.2)	<.001
Risk: 8-14 d	37	5.2 (3.7-7.2)	<.001
Risk: 15-21 d	16	2.6 (1.6-4.3)	<.001
Risk: 22-42 d	27	1.5 (1.0-2.2)	.03
Risk: 43-63 d	30	1.8 (1.3-2.6)	.001
Risk: 64-84 d	18	1.2 (0.8-1.9)	.42
Risk: 85-180 d	67	1.2 (0.9-1.5)	.15



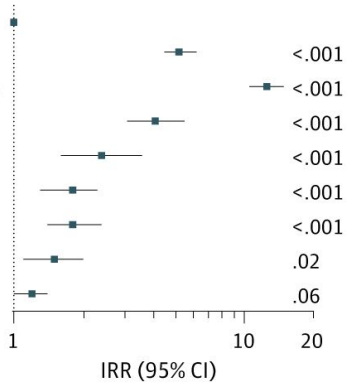
B Stroke

Period	No. of events	IRR (95% CI)	*P* value
Control	1221	1 [Reference]	
Buffer: -21 to -1 d	65	4.2 (3.3-5.4)	<.001
Risk: 1-7 d	47	7.4 (5.5-10.1)	<.001
Risk: 8-14 d	35	5.9 (4.2-8.3)	<.001
Risk: 15-21 d	18	3.7 (2.3-5.9)	<.001
Risk: 22-42 d	37	2.7 (1.9-3.7)	<.001
Risk: 43-63 d	23	1.8 (1.2-2.8)	.005
Risk: 64-84 d	15	1.3 (0.8-2.1)	.32
Risk: 85-180 d	68	1.6 (1.2-2.0)	<.001



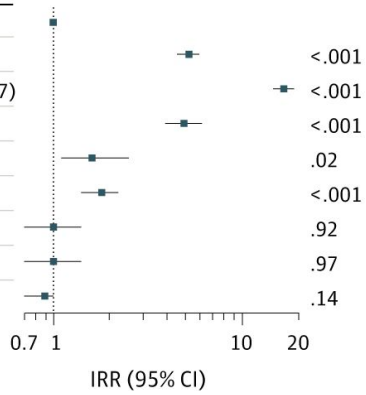
D CHF exacerbation

Period	No. of events	IRR (95% CI)	*P* value
Control	2667	1 [Reference]	
Buffer: -21 to -1 d	165	5.2 (4.5-6.2)	<.001
Risk: 1-7 d	150	12.5 (10.5-14.8)	<.001
Risk: 8-14 d	47	4.1 (3.1-5.5)	<.001
Risk: 15-21 d	24	2.4 (1.6-3.6)	<.001
Risk: 22-42 d	50	1.8 (1.3-2.3)	<.001
Risk: 43-63 d	49	1.8 (1.4-2.4)	<.001
Risk: 64-84 d	37	1.5 (1.1-2.0)	.02
Risk: 85-180 d	114	1.2 (1.0-1.4)	.06



E Arrhythmia

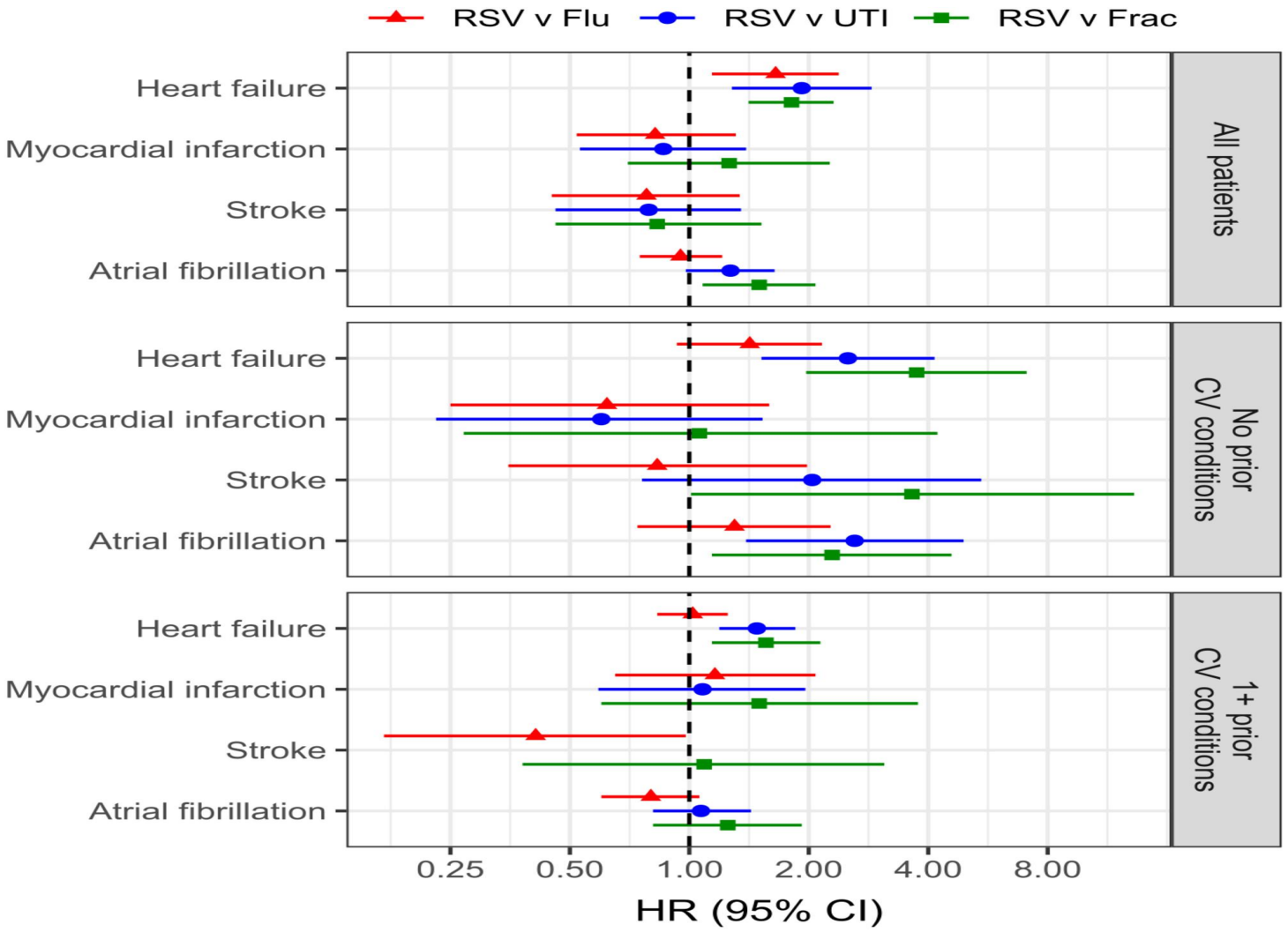
Period	No. of events	IRR (95% CI)	*P* value
Control	3750	1 [Reference]	
Buffer: -21 to -1 d	222	5.2 (4.5-5.9)	<.001
Risk: 1-7 d	278	16.5 (14.5-18.7)	<.001
Risk: 8-14 d	77	4.9 (3.9-6.1)	<.001
Risk: 15-21 d	22	1.6 (1.1-2.5)	.02
Risk: 22-42 d	67	1.8 (1.4-2.2)	<.001
Risk: 43-63 d	36	1.0 (0.7-1.4)	.92
Risk: 64-84 d	33	1.0 (0.7-1.4)	.97
Risk: 85-180 d	106	0.9 (0.7-1.0)	.14



IRRs were adjusted for time-varying covariates, including age, RSV season, and COVID-19 or influenza activity. The dashed line represents the reference value (IRR = 1), indicating no association between RSV-related hospitalization and cardiorespiratory events. CHF indicates congestive heart failure; IRR, incidence risk-ratio.

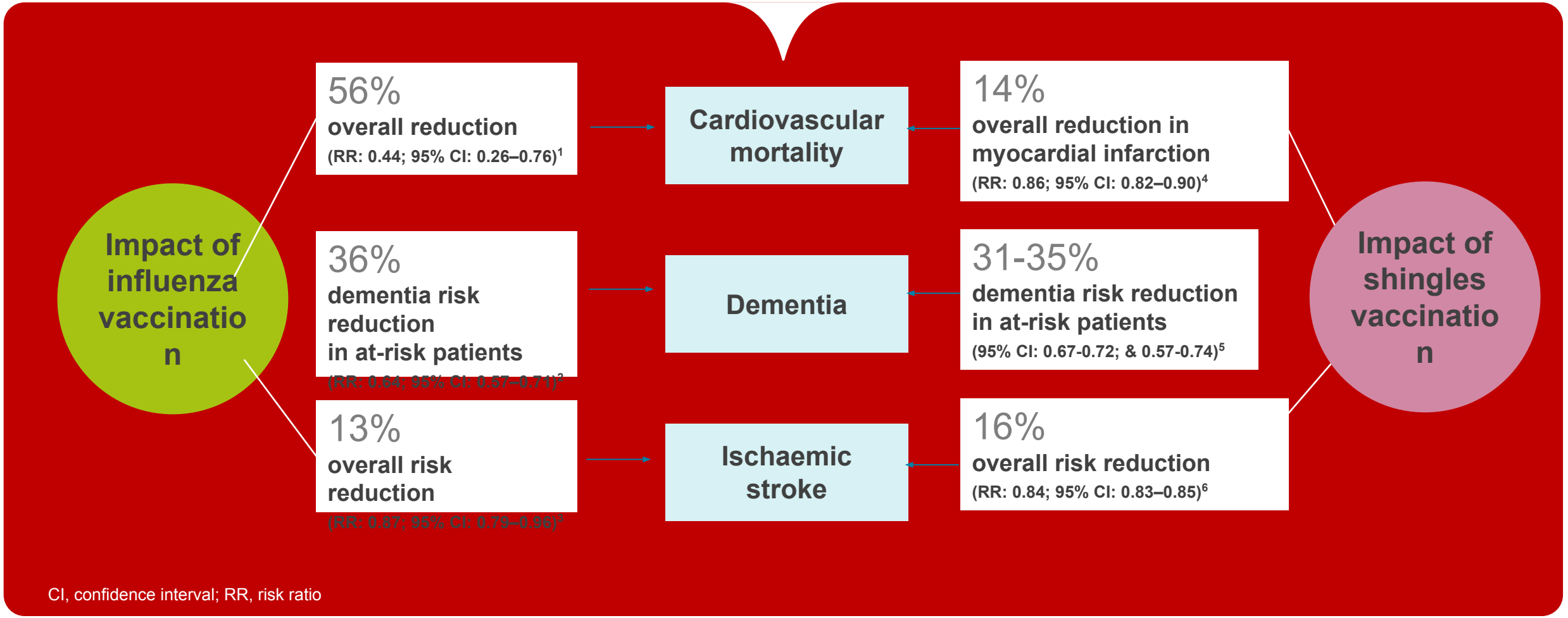
Liang C, Judy J, Aliabadi N, Sato R, Chilson E, Zhou Y, Zhao X, Gessner BD, Begier E. Risk of Cardiorespiratory Events Following Respiratory Syncytial Virus-Related Hospitalization. JAMA Netw Open. 2026 Feb 2;9(2):e2556767.

Respiratory Syncytial Virus (RSV)-Related Hospitalization and Increased Rate of Cardiovascular Events in Older Adults



J American Geriatrics Society, Volume: 73, Issue: 9, Pages: 2685-2694, First published: 23 July 2025, DOI: (10.1111/jgs.19591)

Immunization can also help reduce longer-term health complications but is this just be helping prevent acute infection?



CI, confidence interval; RR, risk ratio

1. Clar C et al. Cochrane Database of Systematic Reviews 2015, Issue 5. Art. No.: CD005050. 2. Liu J et al. Medicine 2016;95:e2868; 3. Tsivgoulis G et al. J Neurol Sci 2018;386:12–18; 4. Schnier C et al., MedRxiv 2021.07.22.21260981; 5. Scherrer JF, et al. PLoS One. 2021 Nov 17;16(11):e0257405; 6. Yang et al. Stroke 2021;52:1712–1721

Could this be a direct “off target” effect of vaccination?

Known for many years that BCG vaccination for bladder cancer associated with a reduced risk of dementia.
But hard to believe that vaccination against a specific microorganism could reduce such disparate diseases.
Perhaps the most surprising “off target” benefit of vaccination in recent times has been dementia risk reduction.
-important, as now the leading cause of death

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DOI: 10.1002/trc2.12293

Translational Research & Clinical Interventions

RESEARCH ARTICLE

Reduced dementia incidence after varicella zoster vaccination in Wales 2013–2020

Christian Schnier[1] | Janet Janbek[2] | Richard Lathe[1] | Jürgen Haas[1]

Methodology

Zoster vaccination made available in Wales to those aged 70
-very little leakage into “private” market
56% of those aged 70 were vaccinated over study period
Followed up for up to 7 years
Incident dementia was classified as either Alzheimer’s or vascular
Compared vaccinated with unvaccinated

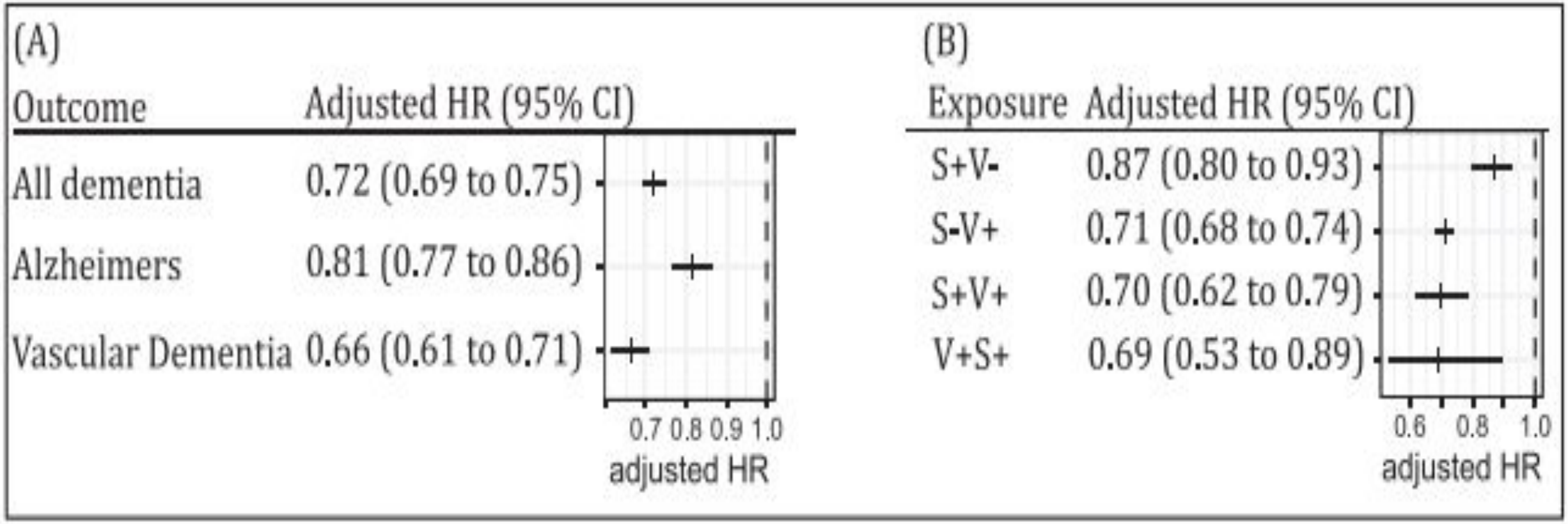
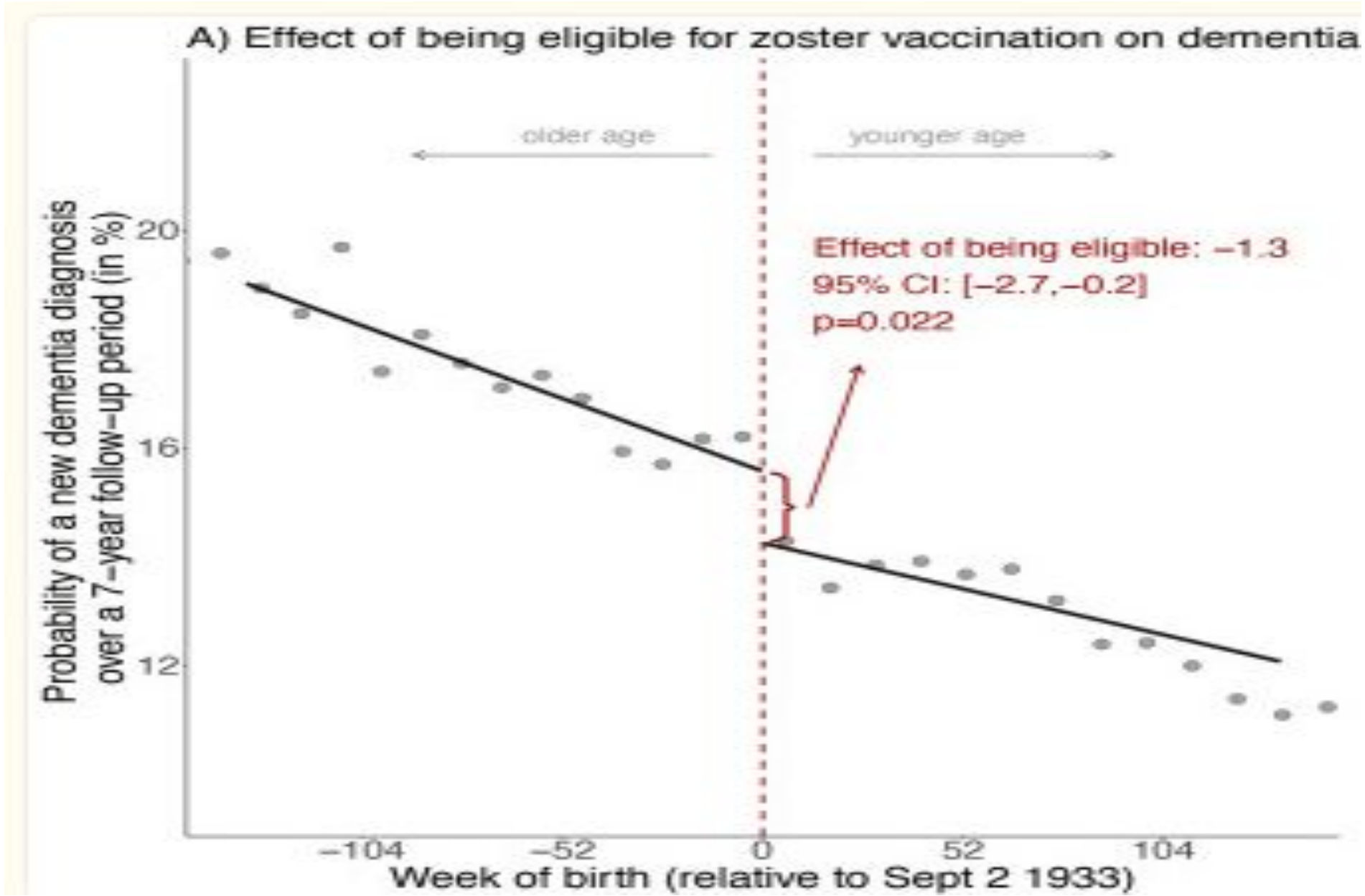


FIGURE 1 Results (adjusted hazard ratio [HR] and 95% confidence interval [CI]) from the multivariable Cox proportional hazard model of the association between exposure to shingles vaccination and dementia. A, Classified by type of dementia (Alzheimer's disease; and vascular

Causal evidence that herpes zoster vaccination prevents a proportion of dementia cases [1]

Markus Eyting,[1,2,3,†] Min Xie,[1,2,†] Simon Heß,[4] and Pascal Geldsetzer[1,5,6,*]

1. Pre-print 2023


A) Effect of being eligible for zoster vaccination on dementia
older age
younger age
Effect of being eligible: −1.3
95% CI: [−2.7,−0.2]
p=0.022
Probability of a new dementia diagnosis over a 7−year follow−up period (in %)
20
16
12
−104
−52
0
52
104
Week of birth (relative to Sept 2 1933)

Journal of Alzheimer's Disease xx (20xx) x–xx
DOI 10.3233/JAD-221231
IOS Press

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

Kristofer Harris[a,1], Yaobin Ling[b,1], Avram S. Bukhbinder[a,c,1], Luyao Chen[b], Kamal N. Phelps[a], Gabriela Cruz[a], Jenna Thomas[a], Yejin Kim[b], Xiaoqian Jiang[b] and Paul E. Schulz[a,*]
[a]*Department of Neurology, McGovern Medical School, University of Texas Health Science Center at Houston, Houston, TX, USA*
[b]*School of Biomedical Informatics, University of Texas Health Science Center at Houston, Houston, TX, USA*
[c]*Division of Pediatric Neurology, Massachusetts General Hospital, Boston, MA, USA*

Methods

Optum’s deidentified Clinformatics® Data Mart Database
Over age 64
Free of dementia for 2 years prior to start
8 year follow-up for incident dementia
Looked at Td/Tdap, both Shingles vaccines and PCV/PPS.

Exposure Definition	Risk ratio (95% CI)	ARR (95% CI)	NNT	E-value
Tdap, Td, and/or TT Vaccination versus Unvaccinated				
≥ 1 Tdap or Td without TT *	0.7059 (0.6876–0.7247)	0.0300 (0.0277–0.0322)	33	2.1848
≥ 1 Tdap or Td or TT	0.7238 (0.7055–0.7427)	0.0302 (0.0280–0.0324)	33	2.1076
≥ 1 Tdap without Td and TT	0.6804 (0.6612–0.7003)	0.0330 (0.0306–0.0355)	30	2.3004
≥ 1 Td without Tdap and TT	0.8039 (0.7533–0.8579)	0.0198 (0.0139–0.0257)	51	1.7947
≥ 1 TT without Tdap and Td	1.0495 (0.9107–1.2096)	0.0062 (–0.0121–0.0245)	–	–
HZ Vaccination versus Unvaccinated				
≥ 1 Zostavax or Shingrix*	0.7520 (0.7378–0.7666)	0.0267 (0.0249–0.0285)	37	1.9919
Completed Shingrix (2 doses) without Zostavax[a]	0.2337 (0.2085–0.2619)	0.0377 (0.0350–0.0404)	26	5.8925
≥ 1 Zostavax with 2 doses Shingrix	0.1424 (0.1148–0.1766)	0.0719 (0.0653–0.0786)	14	13.5243
≥ 1 Shingrix without Zostavax[a]	0.2756 (0.2550–0.2979)	0.0385 (0.0363–0.0406)	26	4.3841
≥ 1 Zostavax without Shingrix	0.9274 (0.9087–0.9466)	0.0083 (0.0060–0.0105)	120	1.3687
Pneumococcal Vaccination versus Unvaccinated				
≥ 1 PCV-13 or PPSV-23*	0.7304 (0.7186–0.7424)	0.0297 (0.0282–0.0312)	34	2.0799
≥ 1 PCV-13 without PPSV-23[b]	0.7319 (0.7167–0.7475)	0.0302 (0.0281–0.0322)	33	2.0736
≥ 1 PPSV-23 without PCV-13	0.7127 (0.6940–0.7320)	0.0295 (0.0273–0.0319)	34	2.1549

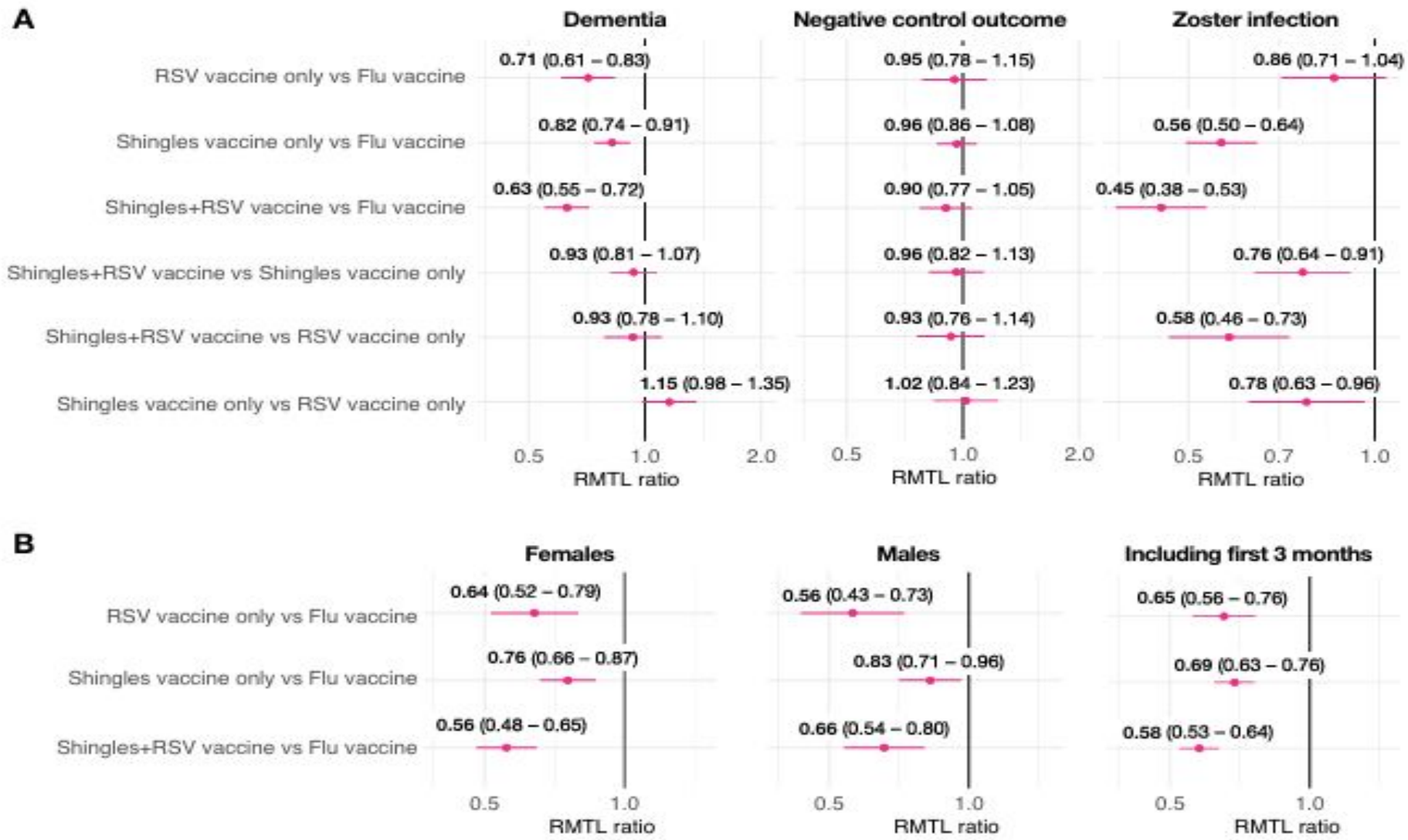
Conclusions

All 3 vaccination types reduced dementia due to Alzheimer's risk over subsequent 8 years
From about 11% to 8%
Around a 25-30% lower risk ratio for vaccinated versus unvaccinated
Possibly having more than one type of vaccination in a class, or additional doses, is more protective.

Could this be an adjuvant effect?

Two vaccines use the same adjuvant (ASO1)
-shingles
-one of the RSV vaccines

Lower risk of dementia with AS01 adjuvanted vaccination against shingles and respiratory syncytial virus infections



RMTL= how much longer individual has lived without the diagnosis

Taquet et al: npj Vaccines| (2025) 10:130

Risk of Alzheimer Dementia After High-Dose vs Standard-Dose Influenza Vaccination

Avram Samuel Bukhbinder,[1,2,*] Yaobin Ling,[3,*] Lauren Jhin,[1] Elizabeth He,[1] Kristofer Harris,[1] Mya Rodriguez,[4] Jenna Thomas,[1] Gabriela Cruz,[1] Kamal Phelps,[1] Yejin Kim,[3] Luyao Chen,[3] Xiaoqian Jiang,[3] and Paul E. Schulz[1]

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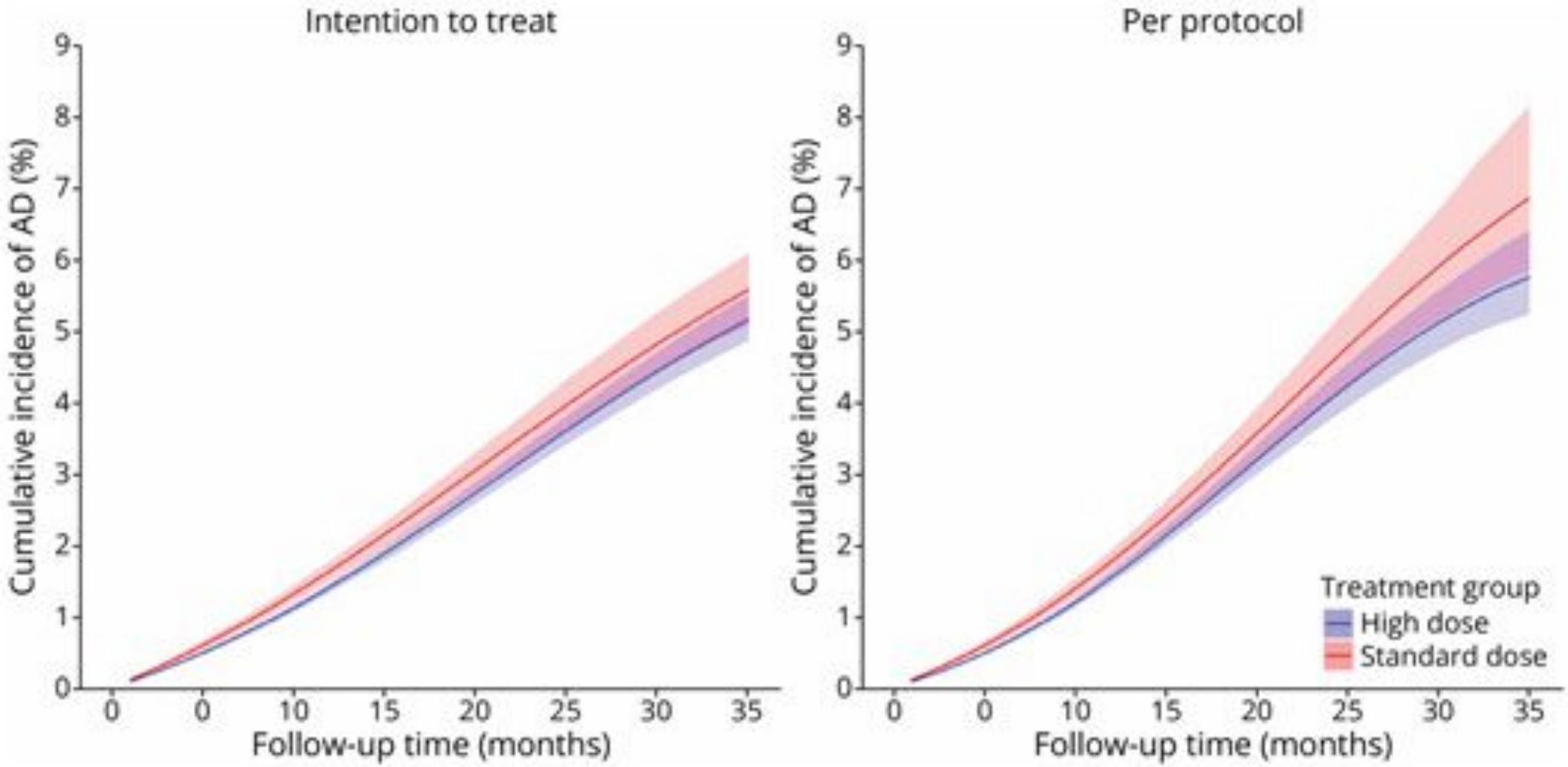
Neurology® 2026;106:e214782. doi:10.1212/WNL.0000000000214782

US Claims database. Patients >65. Followed 3 years.
Received either High dose (H-IIV) or Standard dose (S-IIV) influenza vaccine.
H-IIV group included 120,775 unique participants (185,183 person-trials; mean age 74.4 years, SD 5.5; 57.3% female)
S-IIV group included 44,022 participants (53,918 person-trials; mean age 73.0, SD 6.1; 56.4% female)
H-IIV was associated with significantly lower AD risk during months 1–25 postvaccination (minimum NNT = 185.2 at 25 months)
After sex stratification, risk reduction persisted longer among women (months 1–13, minimum NNT = 416.7) than men (months 17–24, significant only in intention-to-treat analysis, minimum NNT = 232.6).

Figure 3 Cumulative Incidence of AD After High-Dose vs Standard-Dose Influenza Vaccination



The cumulative incidence of AD (y-axis) after high-dose (blue) or standard-dose (red) influenza vaccination. The shaded region indicates the 95% CIs for the cumulative incidence in each treatment group. Note that this interval is different from the 95% CIs for the effect estimates (risk difference and risk ratio) at each time point, as shown in Table 2. Overlap in the 95% CIs of cumulative incidence at a given month of follow-up does not indicate that the 95% CIs for RD and RR for that month include the null value (RD = 0, RR = 1). AD = Alzheimer dementia; RD = risk difference; RR = risk ratio.

frontiers | Frontiers in Immunology

SYSTEMATIC REVIEW
published: 03 May 2022
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Adult Vaccination as a Protective Factor for Dementia: A Meta-Analysis and Systematic Review of Population-Based Observational Studies

Xinhui Wu[1], *Haixia Yang*[2], *Sixian He*[2], *Ting Xia*[3], *Diang Chen*[4], *Yexin Zhou*[5], *Jin Liu*[6], *MengSi Liu*[7] *and Zhen Sun*[7*]

Details

17 studies
1.8 million participants
Numerous vaccines included:
influenza, herpes zoster, Tdap, hepatitis A, hepatitis B, typhoid, BCG and rabies
Follow-up 3-20 years

The overall pooled results showed that vaccinations were associated with a 35% lower dementia risk (HR=0.65, 95% CI: 0.60-0.71)

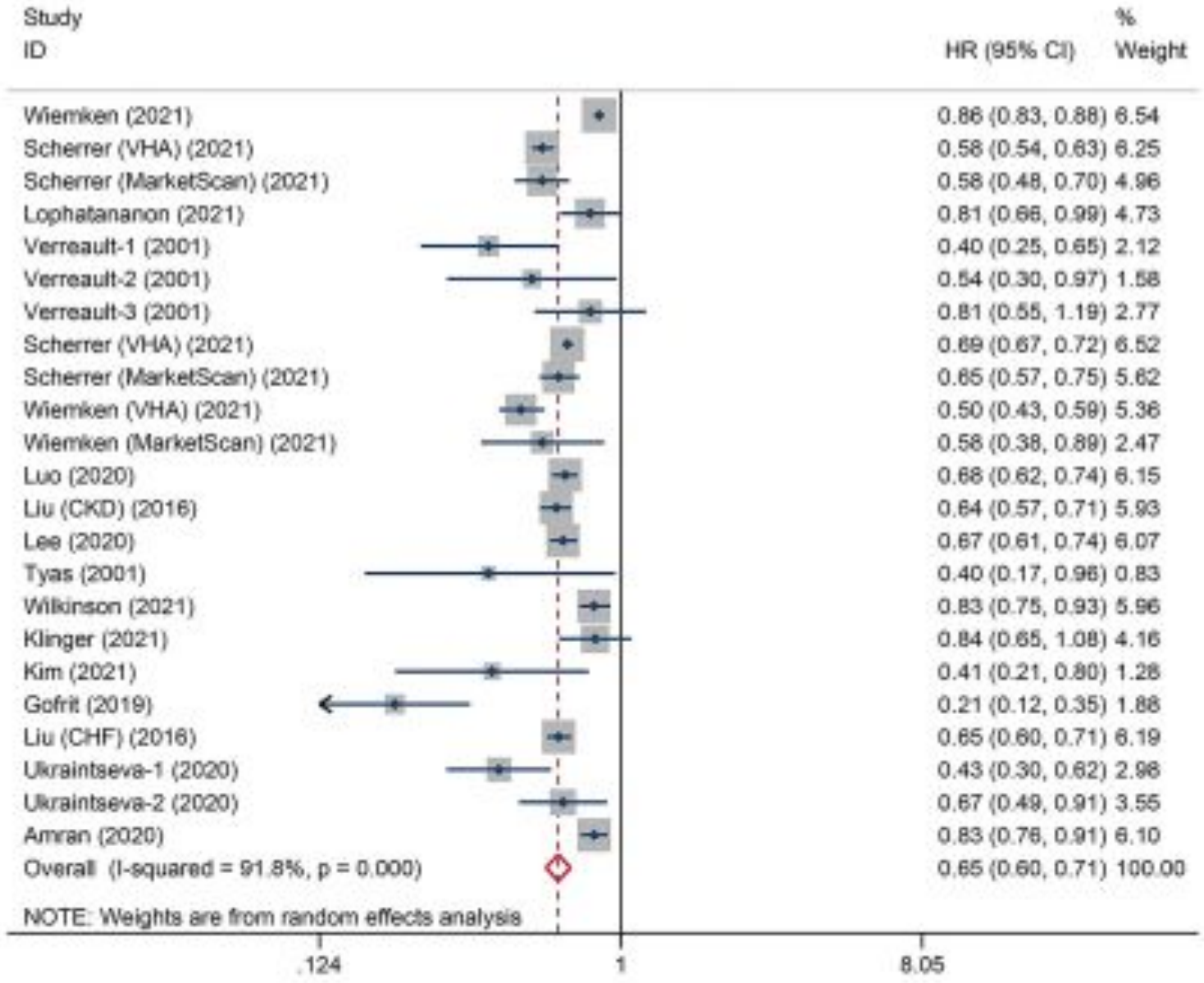


FIGURE 2 | Overall association between adult vaccinations and subsequent dementia risk.

Could we be preventing dementia by preventing viral reactivation?

Much circumstantial evidence linking dementia with viruses
-including HSV1
And a protein linked with Alzheimer's, TDP43, is also linked with anti-microbial activity.

nature medicine

Article

https://doi.org/10.1038/s41591-025-03972-5

Varicella-zoster virus reactivation and the risk of dementia

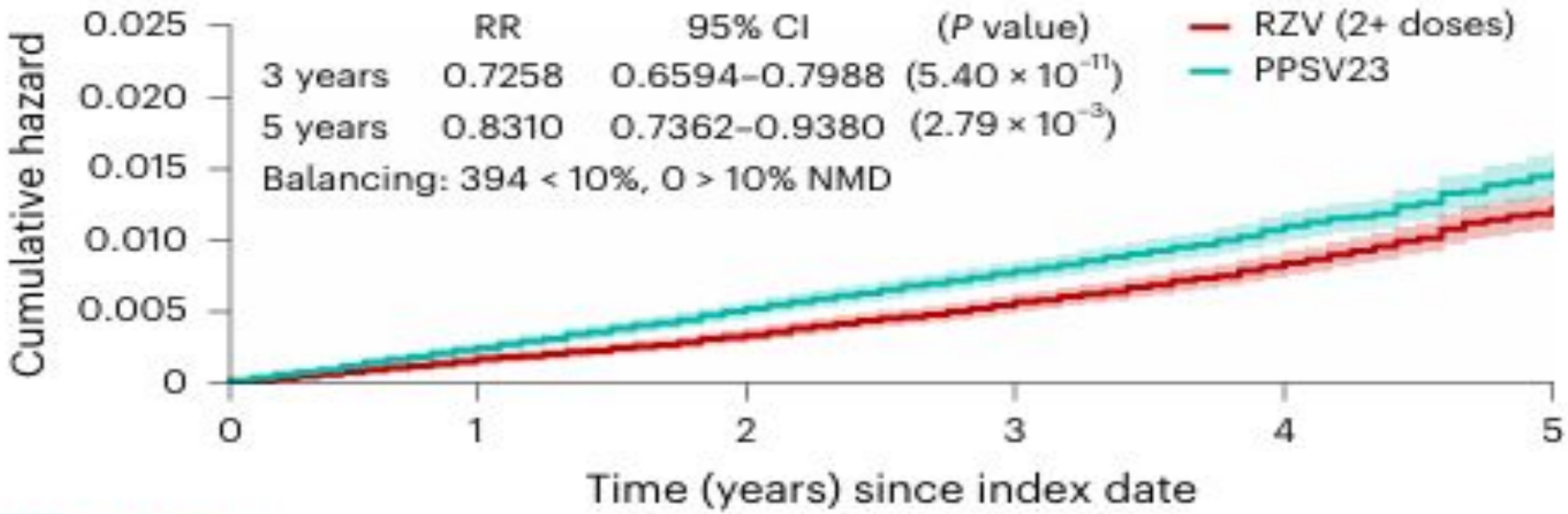
Received: 6 March 2025

Accepted: 18 August 2025

Published online: 06 October 2025

Vitaly Polisky[1], Maria Littmann[1], Aleksei Triastcyn[2], Max Horn[2], Andreas Georgiou[2], Robyn Widenmaier[3], Bruno Anspach[4], Halima Tahrat[4], Sanjay Kumar[5], Carolyn Buser-Doepner[5], Pascal Geldsetzer[6,7], Cornelia M. Van Duijn[8] & Patrick Schwab[2]

c Dementia: RZV (2+ doses) vs PPSV23 (all)



RZV (2+ doses)						
At risk	234,309	184,310	120,043	68,247	32,534	9,031
Censored[a]	0	49,640	113,655	165,229	200,806	224,230
Events[b]	0	359	611	833	969	1,048
PPSV23						
At risk	234,309	172,126	108,595	59,736	26,552	7,121
Censored[a]	0	61,679	124,822	173,457	206,507	225,877
Events[b]	0	504	892	1,116	1,250	1,311

Significance of this effect

Vaccination seems to be as protective against dementia as reversing recognized factors such as smoking or sedentary lifestyle.
Need to consider this approach as anti-amyloid therapies (which also act on the innate immune system) are expensive and have a range of toxicities.
With lecanemab and donanemab now TGA- registered in Australia, and currently administered to around 1,000 individuals, could we get as much benefit from vaccination?
-and greater safety?

Specialist Society Recommendations now recognize this

Australian and New Zealand Society for Geriatric Medicine 2025 Position Paper on Immunization of Older People

Summary and ANZSGM recommendation for vaccination over 60 years old

√ = indicates the vaccine is publicly funded for adults over 65 years old or younger if ATSI or in a high-risk category
×= indicates the vaccine is not currently funded but available via private script (some may be funded- DVA)

Disease	Vaccine Brand Name	Schedule (how often)	Australia Funded	New Zealand Funded	ANZSGM recommendations (for those 60 and older)
Shingles (Herpes Zoster)	Shingrix	2 dose courses, 2nd dose 2-6 months after the first dose (can be given as little as one month apart if high risk- eg immunocompromised)	√ but only if 5 years after Live Attenuated HZV vaccination	√ only if 1st dose given in age 65	All over 65 Consider from age 60
Influenza	Fluad Quad, Fluzone high dose Quad	Annually, before influenza season	√	√	Annually from age 60
Respiratory Syncytial Virus	Arexvy, Abrysvo, mRESVIA	Once- likely revaccination needed after 3-5 years	×	×	65 years and over, consider at age 60
COVID-19	Comirnaty, Spikevax, Nuvaxovid	Booster every 6-12 months before winter	√	√	Every 6 months from age 75 Every 12 months from age 65

Disease	Vaccine Brand Name	Schedule (how often)	Australia Funded	New Zealand Funded	ANZSGM recommendations
Pneumococcal disease	Prevnar 13 (13vPCV) Pneumovax (23vPPV) Capvaxive (21vPCV)	Once	√ Currently only 13vPCV from age 70 × For all other vaccines	× Risked based funding only	21vPCV once off from age 65, at least one year after previous Pneumococcal vaccination. Consider polysaccharide vaccine boosters in high-risk patients
Tetanus /Pertussis/Diptheria	Boostrix	Every 10 years or after high-risk wound	√ (at GP or immunisation clinic only)	√	Once every 10 years from age 65 Consider primary vaccination course (3 doses) for tetanus if not previously given
Meningococcal disease	Meningococcal B Meningococcal ACWY Meningococcal C	Schedule depending on the vaccine brand	√ only for people with medical condition increasing risk of invasive disease	√ only for people with medical condition increasing risk of invasive disease	Consider one course of Men ACWY vaccine and one course of Men B vaccine in higher risk groups from age 65-includes those communally living, travelling to a high-risk country or undertaking Haj or other mass events

How can this protective effect be explained?

Anti-inflammatory effect?
Or reduce the inflammatory response by reducing severity of infection
Inciting immune response against unwanted proteins?
-Amyloid
-Tau
ie acting as an “adjuvant”
Previous studies have also shown that influenza and BCG vaccines in animal models can enhance and maintain microglia activation, restore brain immune homeostasis and reduce Aβ burden, ultimately improving cognitive impairment
Microbes may induce AD pathology
-especially Herpes viruses
Gut microbiome increasingly recognized as a risk factor for AD and other dementias
Amyloid has antimicrobial effects and may be a response to infection
Other off-target effects of vaccination

Vaccination and slower biological ageing

- US Health and Retirement Study
- 3,884 over age 70
- 7 biological ageing domains
- Multiple adjustments
- Shingles vaccination associated with:
  - -lower inflammation score
  - -slower epigenetic ageing
  - -slower transcriptomic ageing
  - -lower composite biological ageing score (p= 0.0002)

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Charting the Research Frontier for Viral Infections, Immunomodulation, and Dementia: A Perspective on Synaptic Biomarkers as Essential Clinical Trial Endpoints

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Conclusions

- The benefits of vaccination do extend beyond preventing target disease
- Increasingly Specialist Societies are recommending vaccination for these reasons
- Mechanism is not clear
- Likely more than just preventing microbial activity/infection
- - we must move beyond simply observing that a virus is associated with AD or that a vaccine is associated with protection, and instead meticulously map the causal pathways from viral infection or vaccine stimulation to changes in synaptic protein expression and co-pathologies like TDP-43 aggregation
- Specialists, just like primary health carers, must actively promote vaccination
- Indeed- we have this Masterclass!

A/Prof Michael Woodward AM

IMMUNISATION COALITION

Q&A

Beyond vaccinating against specific diseases: prevention benefits of other diseases