Brigham and Women's Hospital
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Update on Immunizations: 2026

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Disclosures

- Co-chair of immunization chapter of OI guidelines
- I have no relevant financial relationships with ineligible companies.
- I love vaccines

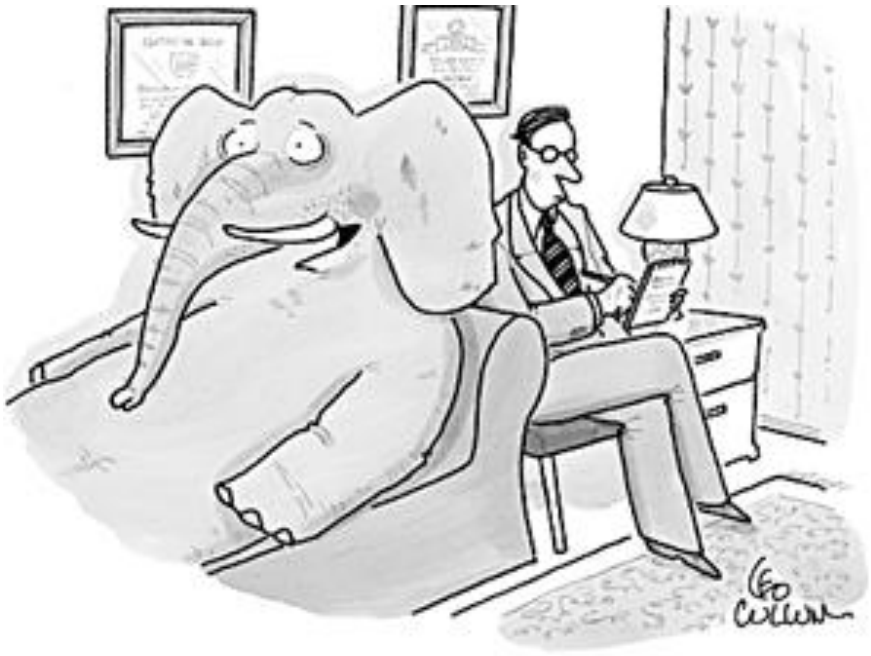
Learning objectives

By the end of this session, you will be able to:

- Identify key resources for up-to-date vaccine guidance
- Counsel patients regarding new data on vaccine efficacy and safety
- Impress your friends and family with what's on the horizon

Disclosures

- No financial disclosures
- I love vaccines
- Not everyone loves vaccines as much as I do



"I'm right there in the room, and no one even acknowledges me."

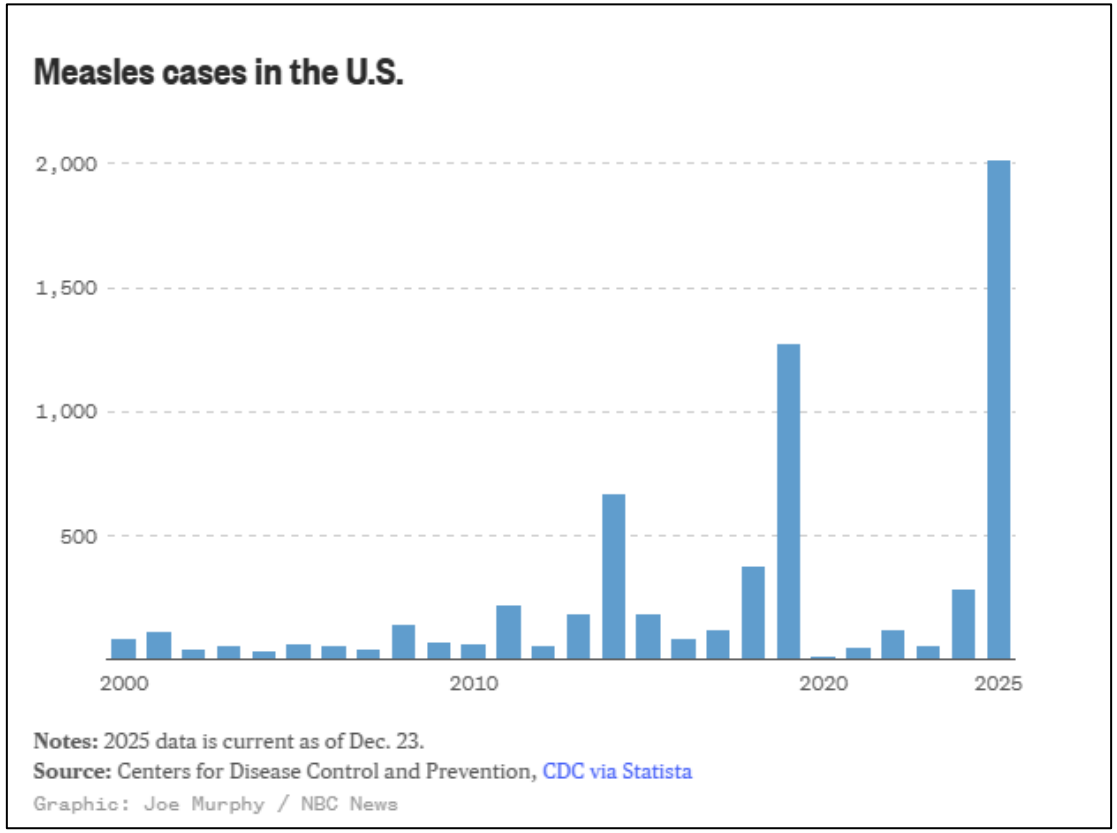
Measles

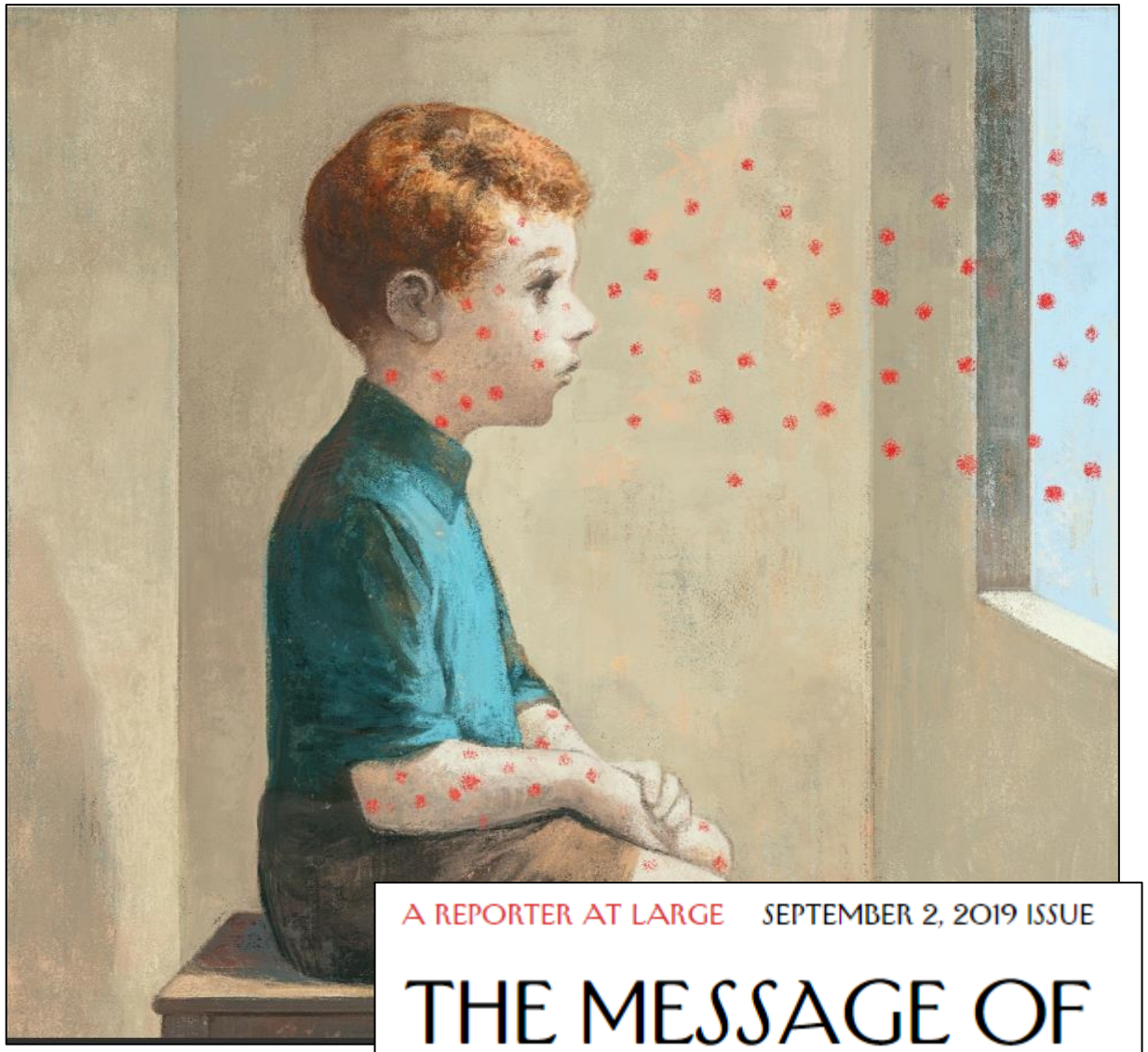
- Vaccine implemented in 1957
- Two-dose series implemented in response to outbreak in 1989
- Eliminated in the United States in 2000!

We all know how that story goes…

2024: 395,521 laboratory confirmed cases, >50% hospitalized

2025: 2,065 confirmed measles cases United States including 3 deaths





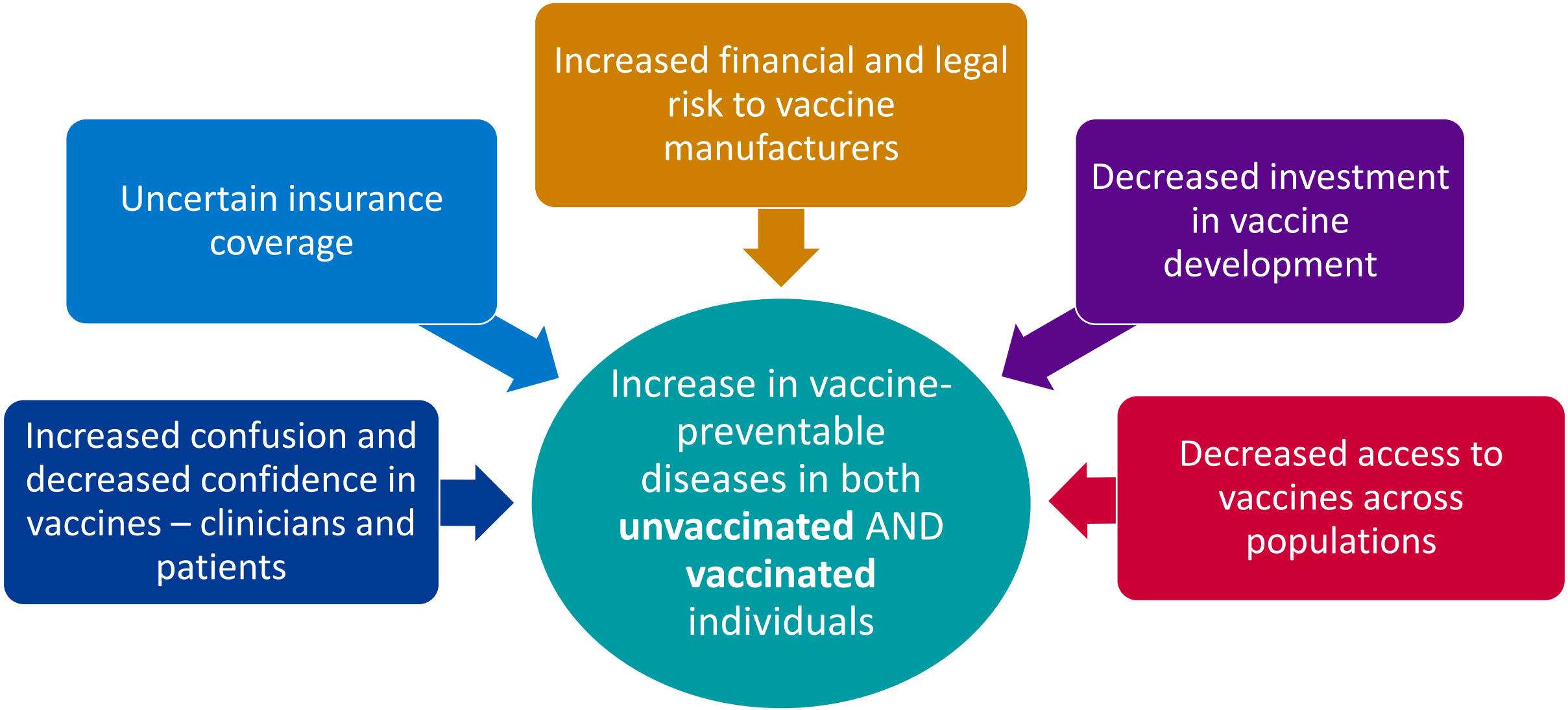
A REPORTER AT LARGE SEPTEMBER 2, 2019 ISSUE

THE MESSAGE OF MEASLES

By Nick Paumgarten August 26, 2019

“Vaccination has been the victim of its own success. Eradication has afforded [us] the luxury of equivocation.”

“The virus we are fighting isn’t so much measles as it is vaccine hesitancy and refusal.”


Increased financial and legal risk to vaccine manufacturers
Uncertain insurance coverage
Decreased investment in vaccine development
Increase in vaccine-preventable diseases in both **unvaccinated** AND **vaccinated** individuals
Increased confusion and decreased confidence in vaccines – clinicians and patients
Decreased access to vaccines across populations

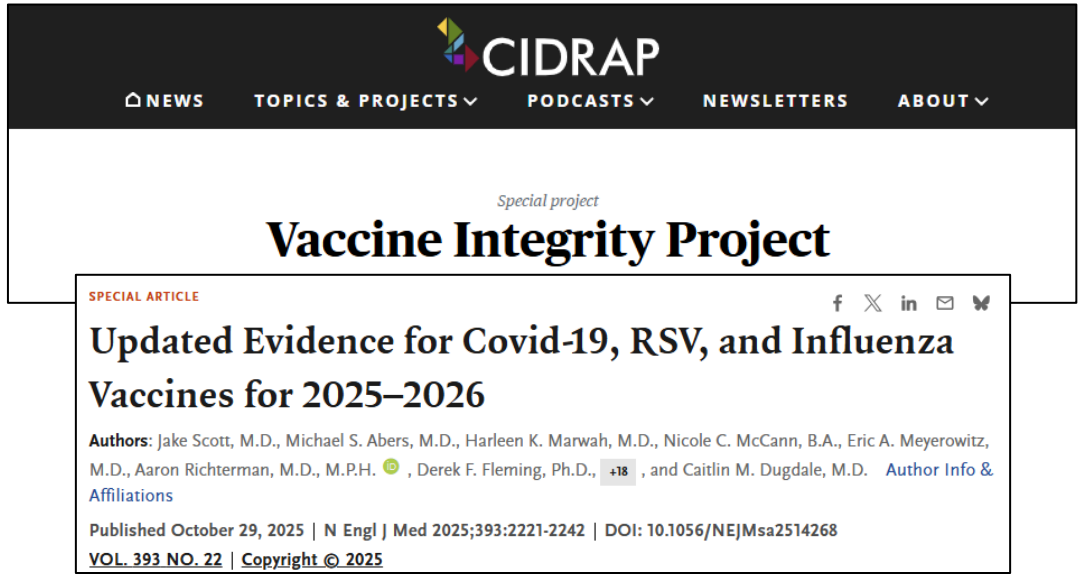
Vaccines in 2026: Promise and Perils

- Vaccine development is happening at the fastest pace in history
- Vaccines continue to be the most impactful tool for disease prevention worldwide

- Trust in public health agencies is tenuous
- The anti-vaccine and anti-science movement in the United States is stronger than ever

Where can we find information we can trust?

American Academy of Pediatrics: children and adolescents
American Academy of Family Physicians: fall vaccine guidance
American College of Gynecologists: pregnant and lactating women
Infectious Disease Society of America: immunocompromised hosts



Roadmap for the remainder of the talk…

- Pneumococcus
- RSV
- COVID
- Lightning round!

News you can Use

Pneumococcal vaccine Case series

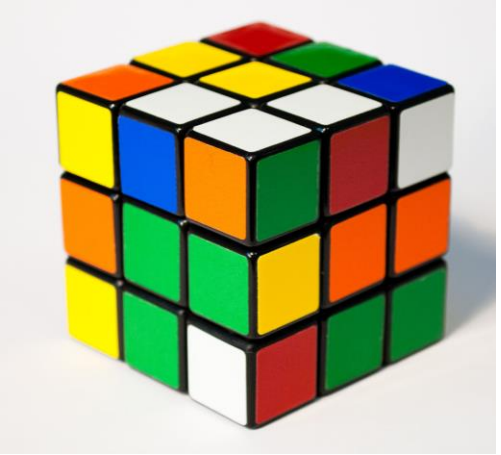
What pneumococcal series, including booster, does each patient need?

65-year-old with no medical problems.

52-year-old with no medical problems.

20-year-old with cochlear implants

26-year-old with sickle cell disease and functional asplenia



26-year-old with multiple sclerosis on ocrelizumab

Table 1. Medical conditions or other indications for administration of PCV13 and PPSV23 for adults

Medical indication	Underlying medical condition	PCV13 for ≥ 19 years	PPSV23* for 19 through 64 years		PCV13 at ≥ 65 years	PPSV23 at ≥ 65 years
		Recommended	Recommended	Revaccination	Recommended	Recommended
None	None of the below				✓	✓ ≥ 1 year after PCV13
Immunocompetent persons	Alcoholism		✓		✓	✓ ≥ 1 year after PCV13 ≥ 5 years after any PPSV23 at < 65 years
	Chronic heart disease†					
	Chronic liver disease					
	Chronic lung disease§					
	Cigarette smoking					
	Diabetes mellitus					
	Cochlear				✓ no previous 13 vaccination	✓ ≥ 8 weeks after PCV13 ≥ 5 years after any PPSV23 at < 65 years
	CSF leaks					
Persons with functional or anatomic asplenia	Congenita asplenia				✓ no previous 13 vaccination	✓ ≥ 8 weeks after PCV13 ≥ 5 years after any PPSV23 at < 65 years
	Sickle cel hemoglobinopathies					
Immunocompromised persons	Chronic renal failure	✓	✓ ≥ 8 weeks after PCV13	✓ ≥ 5 years after first dose PPSV23	✓ If no previous PCV13 vaccination	✓ ≥ 8 weeks after PCV13 ≥ 5 years after any PPSV23 at < 65 years
	Congenital or acquired immunodeficiencies¶					
	Generalized malignancy					
	HIV infection					
	Hodgkin disease					
	Iatrogenic immunosuppression‡					
	Leukemia					
	Lymphoma					
	Multiple myeloma					
	Nephrotic syndrome					
	Solid organ transplant					

OLD NEWS

Vol. 23, No. 19 *Est. 1923* *Fall 2018*

October, 2021

PCV20 alone
OR
PCV15 + PPSV23 one year later

All patients ≥65 years old

AND

Patients 19-64 years old with underlying medical condition or risk factors

No boosters.

Kobayashi M et al. *MMWR.* January 28, 2022

Wait…PCV 21???

June, 2024

ACIP recommends PCV21 as an option for adults aged ≥19 years who currently have a recommendation to receive a dose of PCV.

PCV-21 is not just PCV-20 + 1

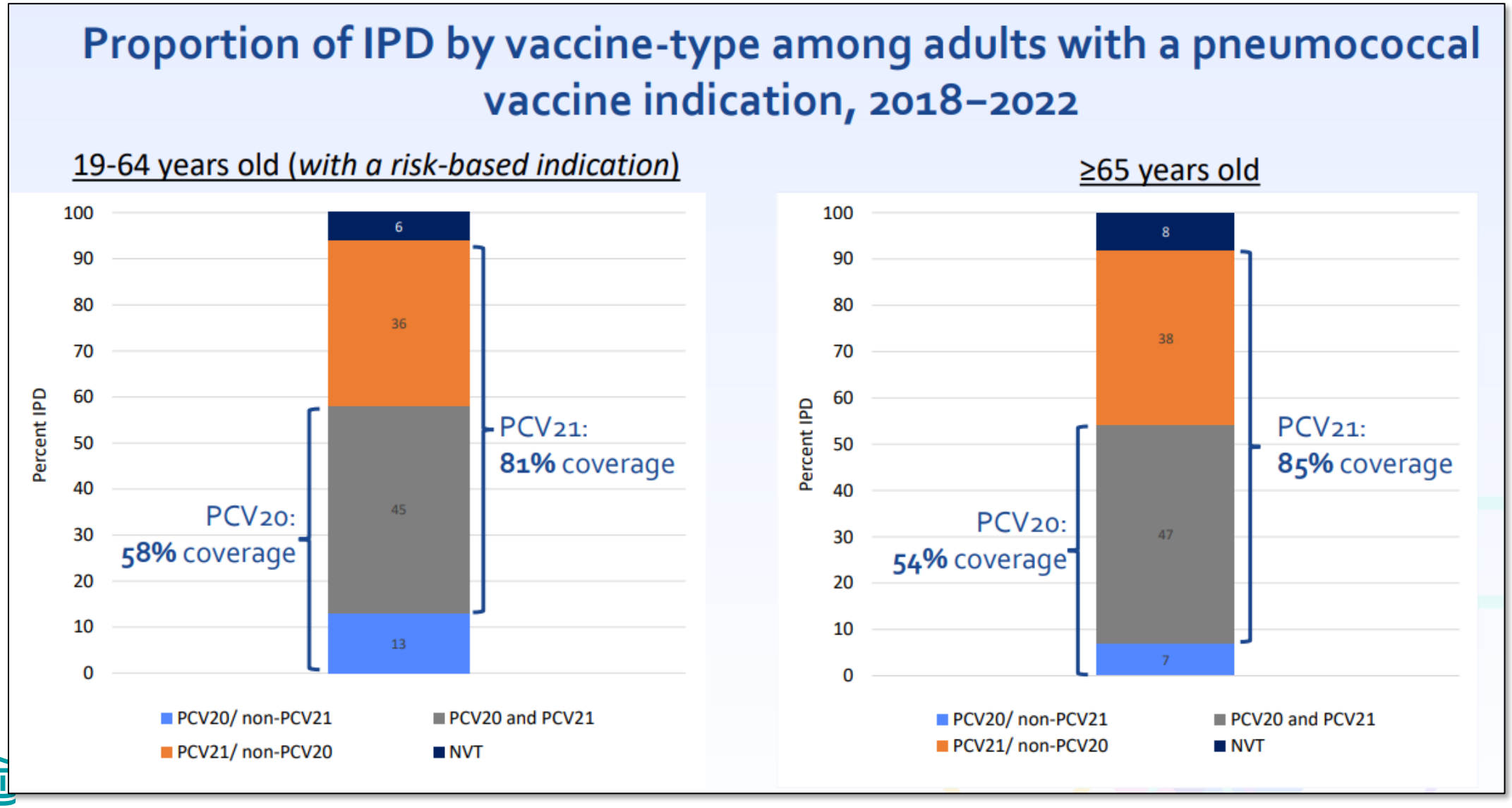
21-valent pneumococcal conjugate vaccine (CAPVAXIVE™, Merck):

- Approved by the FDA for adults aged ≥18 years on June 17, 2024[1]

	1	3	4	5	6A	6B	7F	9V	14	18C	19A	19F	23F	22F	33F	8	10A	11A	12F	15B	2	9N	17F	20	15A	15C	16F	23A	23B	24F	31	35B
PCV15																																
PCV20																																
PPSV23																																
PCV21																																

https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/01-Pneumococcal-Loehr-508.pdf

PCV-21 is not just PCV-20 + 1



https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/01-Pneumococcal-Loehr-508.pdf

2026 Pneumococcal vaccine recommendations

- PCV-21 recommended for anyone ≥ 50 years old or anyone with an underlying condition or risk factor*
- People who have previously been vaccinated with PCV-20 **do not** need a dose of PCV-21

No boosters.

*Conditions
Alcohol use disorder
Heart disease
Liver disease
Lung disease
CKD
Cigarette smoking
Cochlear implant
Asplenia
CSF leak
Diabetes
Malignancy
HIV
Hodgkin disease
Immunodeficiency
Immunosuppression
Solid organ transplant
Sickle cell disease[20]

Pneumococcal vaccine

	1	3	4	5	6A	6B	7F	9V	14	18C	19A	19F	23F	22F	33F	8	10A	11A	12F	15B	2	9N	17F	20	15A	15C	16F	23A	23B	24F	31	35B
PCV15																																
PCV20																																
PPSV23																																
PCV21																																

"Higher concentrations of **serotype 4** reported in parts of the Western United States, including Alaska, Colorado, New Mexico, and the Navajo Nation."

Consider PCV-20 if you practice in these regions

Pneumococcal vaccine Case series

What pneumococcal series, including booster, does each patient need?

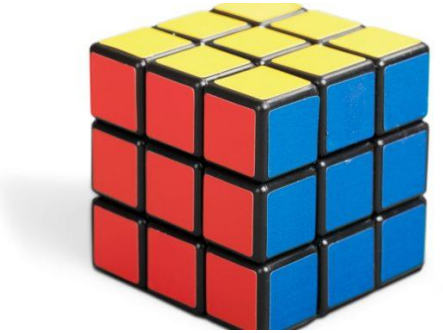
PCV-21 x1*

PCV-21 x1*

PCV-21 x1*

PCV-21 x1*

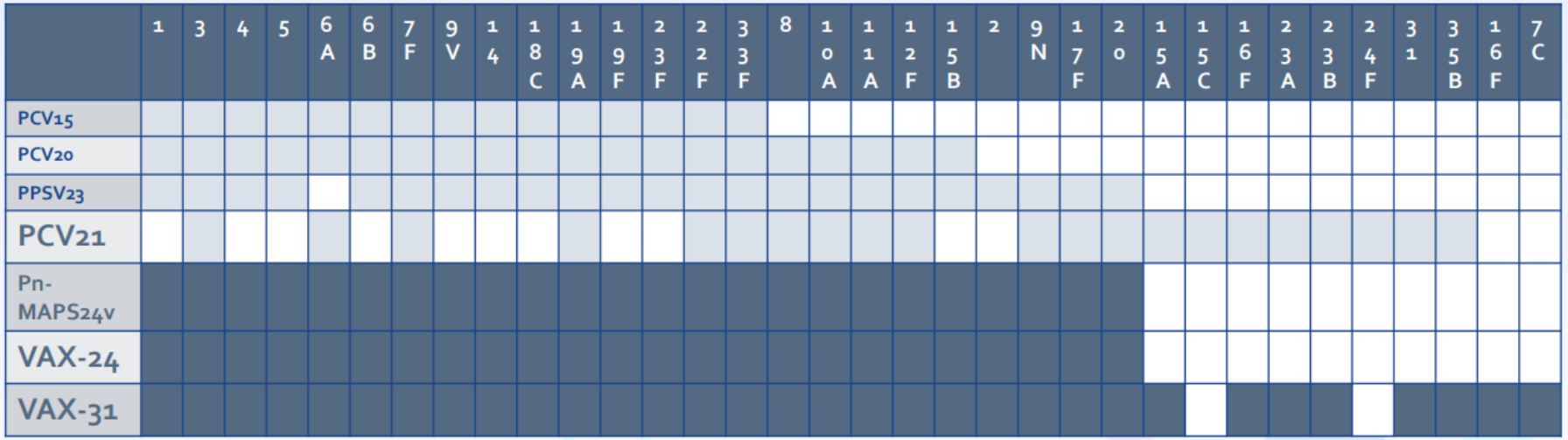
PCV-21 x1*



*or PCV-20 orPCV-15 + PPSV-23

But wait…there's more!

New Adult Pneumococcal Vaccines in Advanced Stages of Development



24-valent pneumococcal vaccines:

- **Pn-MAPS24v (GSK):** Completed phase 1/2 study for adults; Breakthrough Therapy Designation granted and Phase 3 study in preparation; undergoing phase 2 studies in infants[1]
- **VAX-24 (Vaxcyte):** Completed phase 1/2 studies for adults, completed enrollment for phase 2 studies in infants[2]

31-valent pneumococcal vaccine (VAX-31, Vaxcyte):

- Completed enrollment of phase 1/2 study in adults aged ≥50 years[3]

https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/01-Pneumococcal-Loehr-508.pdf

My predictions…

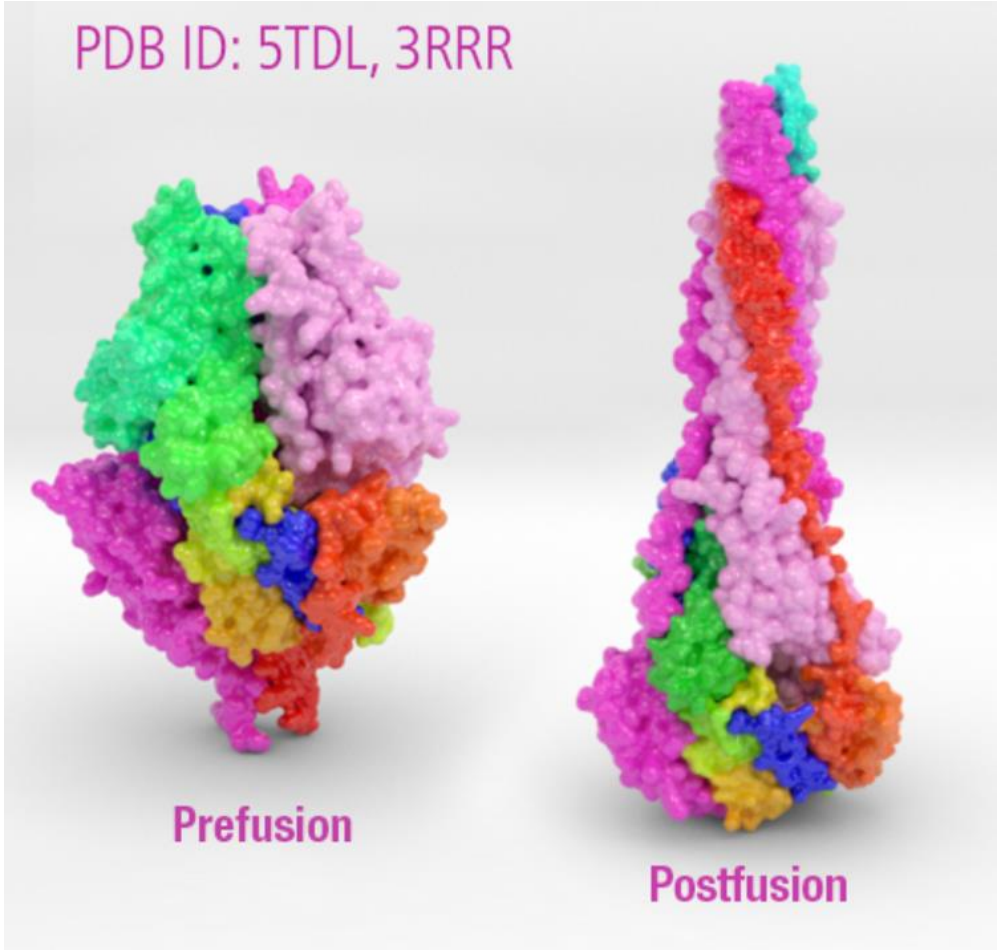
- Polysaccharide vaccine (PPSV-23) will be phased out (already happening)
- Rolling approval of conjugate vaccines with broader serotype coverage
- Will people previously vaccinated with PCV-20 or PCV-21 need broader serotype boosters when available?

Case

For which of the following patients would you recommend the RSV vaccine?

A. 71-year-old with no medical problems
B. 62-year-old with history of ESRD s/p renal transplant on tacrolimus, MMF, prednisone
C. 32-year-old pregnant woman with no medical problems at 33 weeks gestation
D. 38-year-old pregnant woman with SLE on prednisone at 14 weeks gestation

RSV F-protein



RENOIR: RSV vaccine Efficacy study iN Older adults Immunized against RSV disease

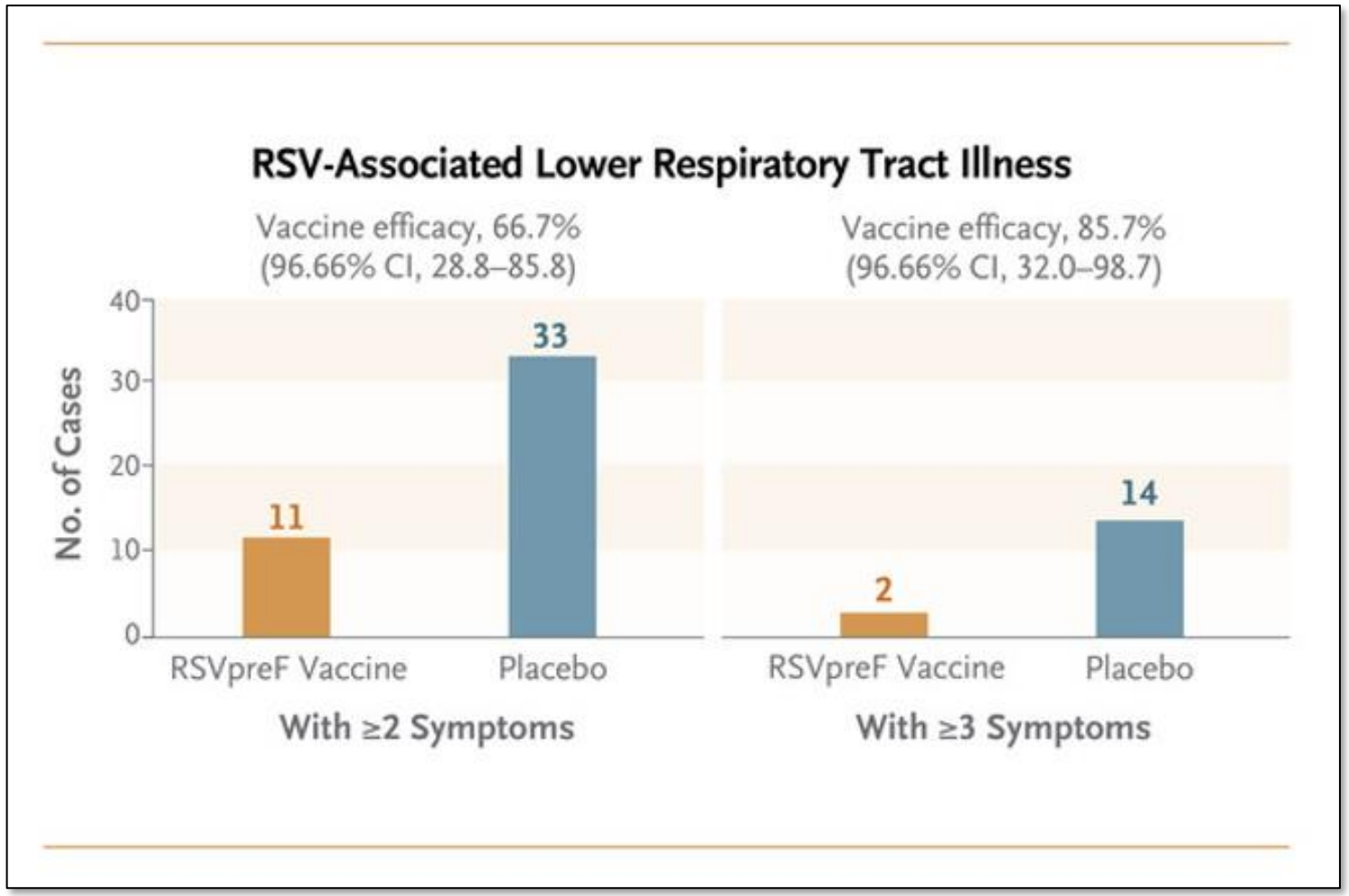
- Bivalent vaccine (Pfizer)
- Individuals 60 years and older
- ~34,000 participants
- Randomized to vaccine vs placebo before RSV season
- Immunocompromised patients excluded

Age range	% participants
60-69	62
70-79	32
>/=80	6

≥1 High risk condition	% participants
Yes	51.5
No	48.5

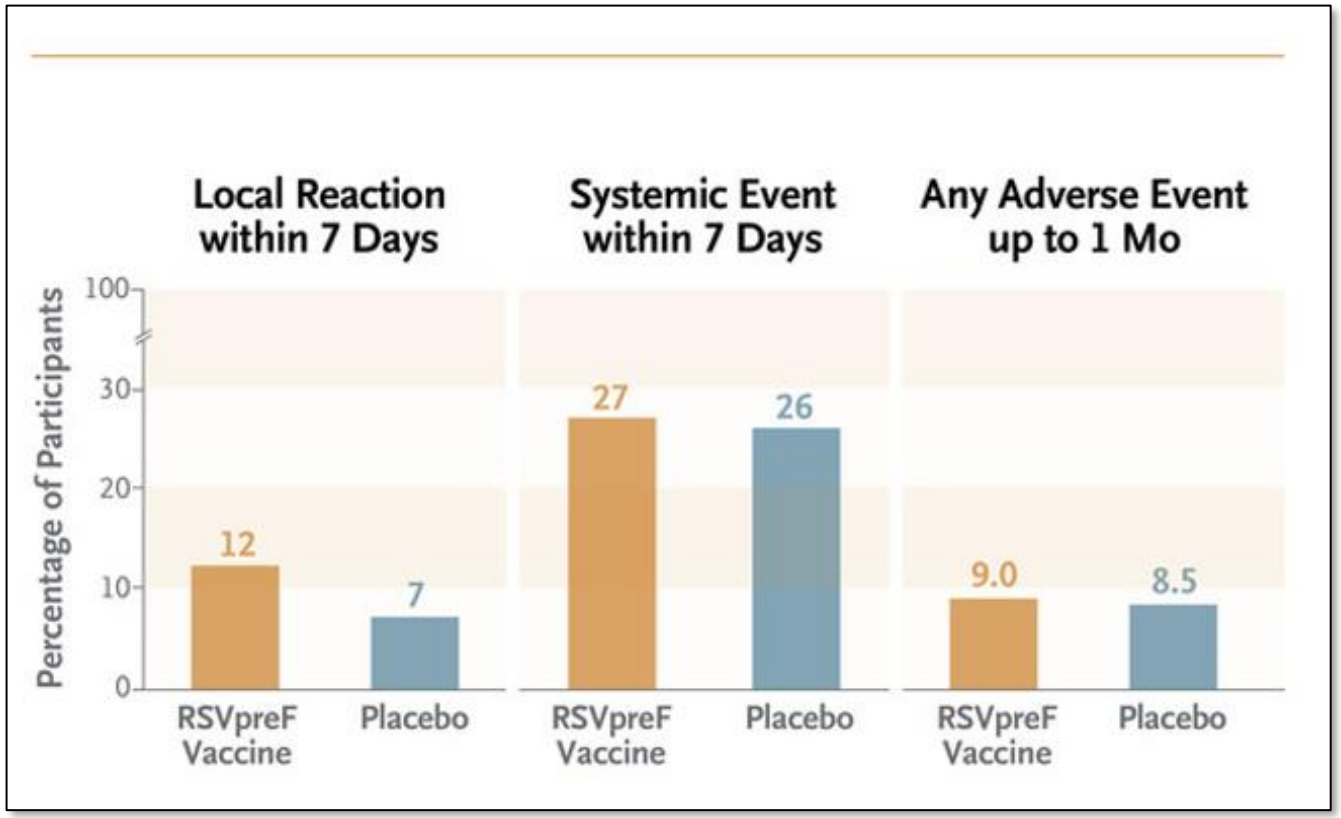
Walsh et al, *New Engl J Med* April 5, 2023

RSV Vaccine Efficacy



Walsh et al, *New Engl J Med* April 5, 2023

RSV Vaccine Safety



3 Inflammatory neurologic events

- 1 case of GBS
- 1 case of Miller-Fisher syndrome
- 1 case of undifferentiated lower motor neuron disease

Walsh et al, *New Engl J Med* April 5, 2023

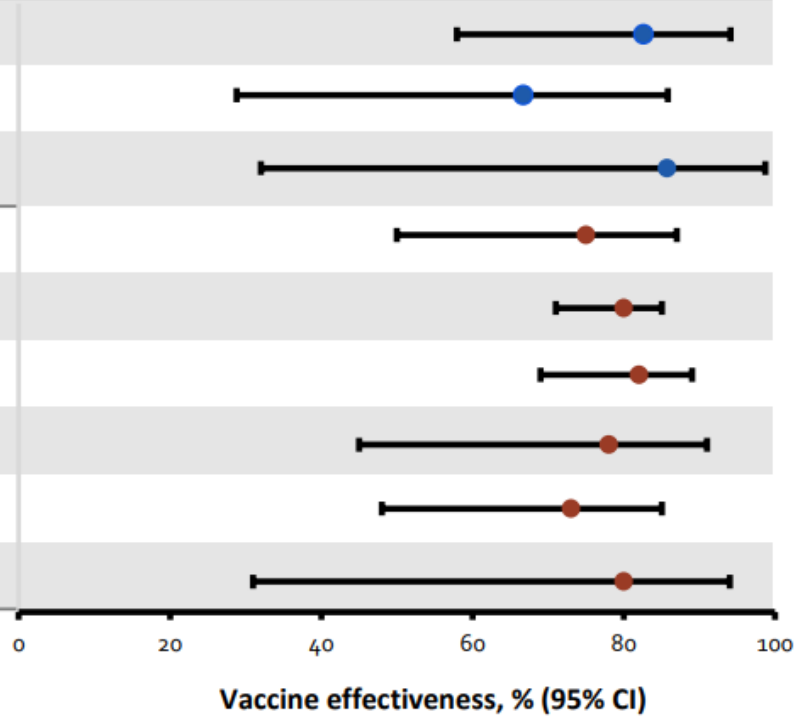
Initial RSV studies: limitations

- Immunocompromised patients not included in studies
- Did not include many participants >75 (group at highest risk)
- Safety → What to make of the inflammatory neurologic events in each study?
- Protection drops in the second season → A second shot booster did not seem to help

Real-world RSV vaccine effectiveness

Observational VE studies show RSV vaccines protect against severe RSV disease, similar to results from trials, although endpoints differ

Outcome	Analysis	Vaccine efficacy/effectiveness, % (95% CI)
Symptomatic, RSV-associated lower respiratory tract disease (LRTD)	GSK trial (≥2 or 3 sx LRTD, primary endpoint)†	83 (58–94)
	Pfizer trial (≥2 sx LRTI, co-primary endpoint)*	67 (29–86)
	Pfizer trial (≥3 sx LRTI, co-primary endpoint)*	86 (32–99)
RSV-associated hospitalization	IVY Network, adults ≥60 years§	75 (50–87)
	VISION, adults ≥60 years, immunocompetent	80 (71–85)
	VHA, adults ≥60 years§	82 (69–89)
	Medicare ESRD, otherwise immunocompetent, ≥65y	78 (45–91)
	VISION, immunocompromised	73 (48–85)
	Medicare ESRD, additional immunocompromise, ≥65y	80 (31–94)



Abbreviations: LRTI = lower respiratory tract infection; LRTD = lower respiratory tract disease; sx = symptoms or signs; y = years

https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/07-RSV-Adult-Surie-508.pdf

Real-world RSV vaccine effectiveness

	RSV Vaccination (GSK or Pfizer)				No Vaccination			
	N	No. of Events	Follow-up, person-years	Incidence Rate (events/ 1000 person-years)	No. of Events	Follow-up, person-years	Incidence Rate (events/ 1000 person-years)	Vaccine Effectiveness, % (95% CI)
Age group								
60–69 years	28,247	17	7,494	2.3 (1.3–3.6)	74.9	7,474	10.0 (7.9–12.4)	**78 (63–86)**
70–79 years	82,734	47	22,251	2.1 (1.6–2.8)	204.8	22,168	9.2 (8.0–10.6)	**77 (69–83)**
≥80 years	35,691	26	9,601	2.7 (1.8–4.0)	93.5	9,500	9.8 (8.0–12.0)	**72 (59–81)**
Immunocompromised*								
No	135,936	71	36554	1.9 (1.5–2.5)	325.5	36,354	9.0 (8.0–10.0)	**78 (72–83)**
Yes	10,639	16	2753	5.8 (3.3–9.4)	54.2	2,730	19.9 (15.2–25.8)	**71 (52–83)**

https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/07-RSV-Adult-Surie-508.pdf

Post marketing surveillance: Guillain Barre Syndrome

- Results from two different types of analyses are **“mixed and highly uncertain”**
- These analyses do not provide clear, conclusive evidence of an elevated risk of GBS, but elevated risk cannot be ruled out at this time
- FDA is conducting medical chart review on individual cases

https://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2024-06-26-28/06-RSV-Adult-Lloyd-508.pdf

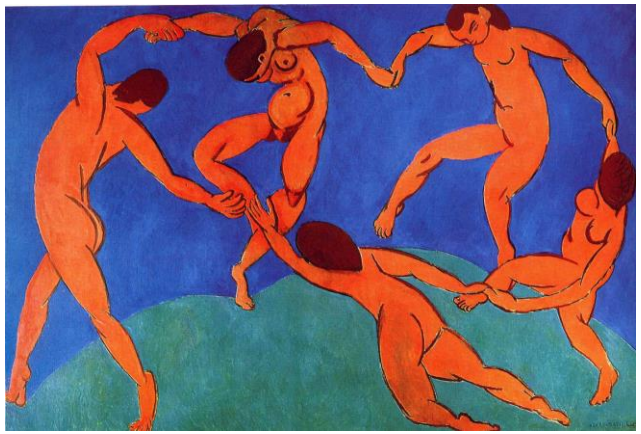
2026 RSV vaccine recommendations

- One dose RECOMMENDED for anyone age 75 and older
- One dose RECOMMENDED for 50-74 who are at high risk for severe RSV disease
- For people 50-74 who are NOT at risk for severe RSV disease, RSV vaccine is NOT RECOMMENDED
- Approved by FDA for use in adults 18-49 years old at increased risk for lower respiratory tract disease

RSV vaccination will have the most benefit if given in late summer or early fall.

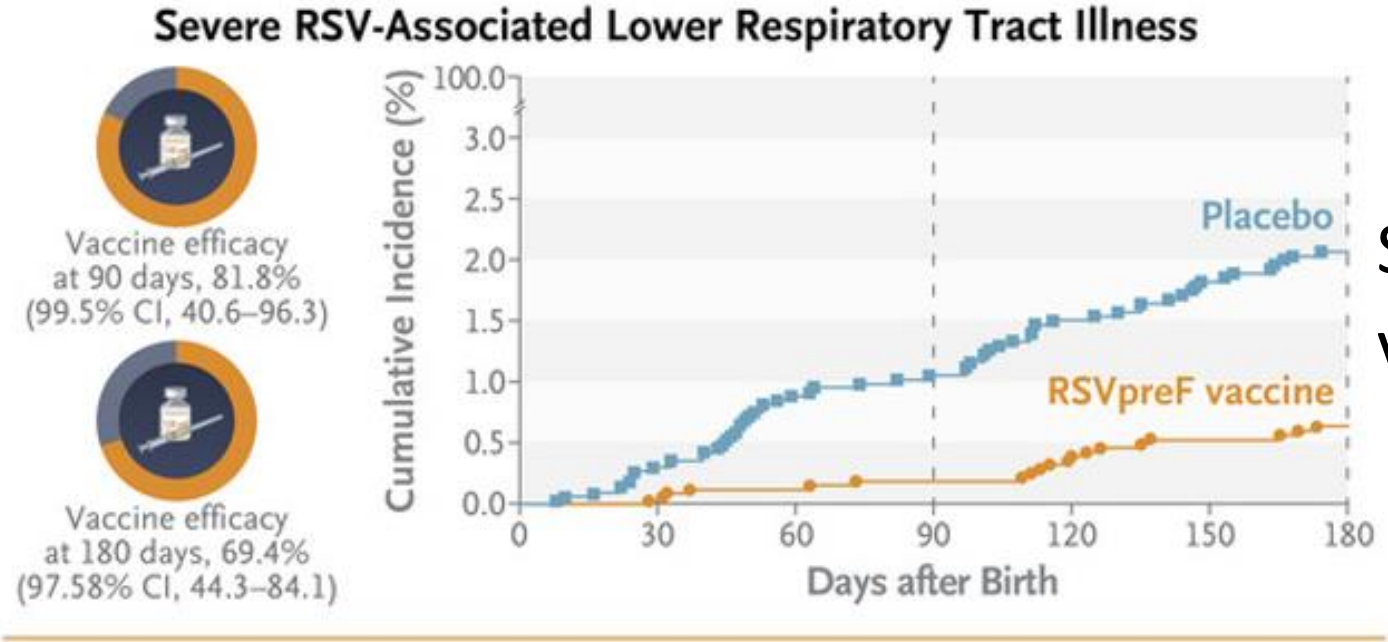
Adults who have already received a dose of RSV vaccine DO NOT need to receive another dose this year.

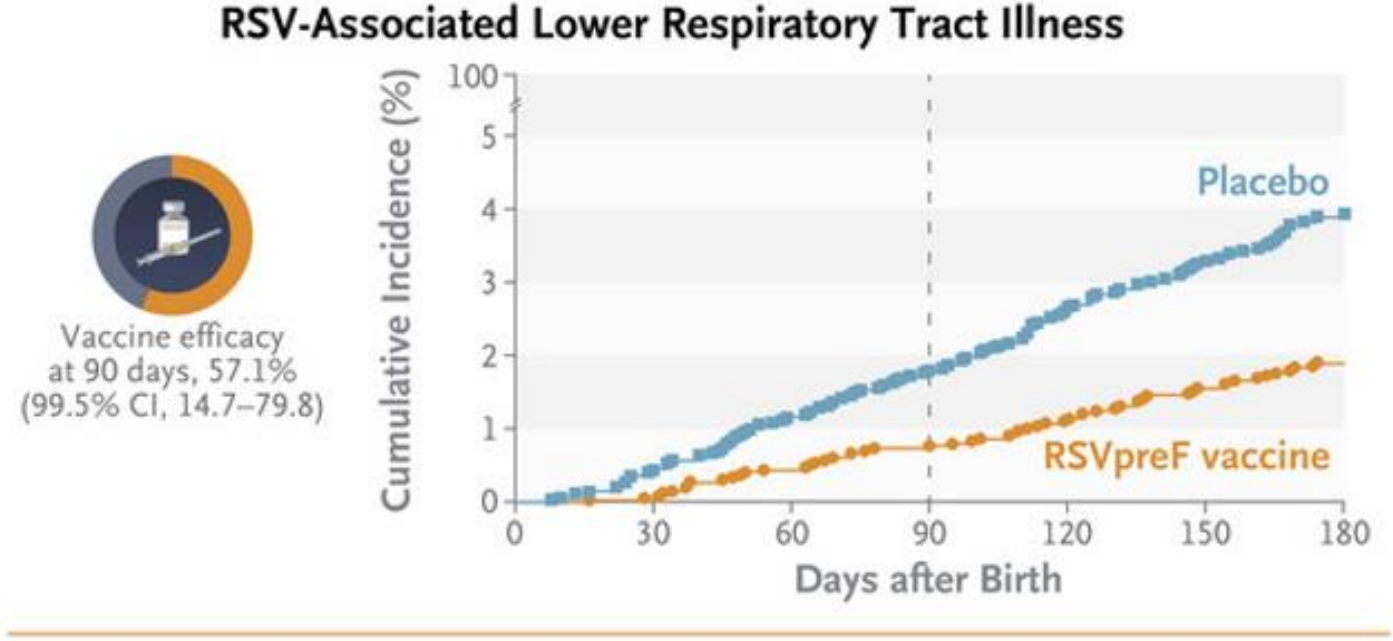
MATISSE: MATernal **I**mmunization **S**tudy for **S**afety and **E**fficacy



- Same Bivalent vaccine candidate (Pfizer)
- Maternal immunization at 24-36 weeks gestation→ passive immunity to infants
- Primary outcome: RSV in infants
- 7392 participants
- Healthy, uncomplicated, singleton pregnancies
- Women with high-risk pregnancies were excluded

Kampmann et al, *New Engl J Med* April 5, 2023





Severe disease:

Vaccine efficacy 82%

No safety signal in maternal participants or in newborns/toddlers up to 24 months after birth

Any LRTI:

Vaccine efficacy 57.1%

Kampmann et al, *New Engl J Med* April 5, 2023

2026 RSV vaccine recommendations

- One dose RECOMMENDED for anyone age 75 and older
- One dose RECOMMENDED for 50-74 who are at high risk for severe RSV disease
- For people 50-74 who are NOT at risk for severe RSV disease, RSV vaccine is NOT RECOMMENDED
- Approved by FDA for use in adults 18-49 years old at increased risk for lower respiratory tract disease
- One dose of RSV vaccine RECOMMENDED for pregnant people during weeks 32 through 36 of pregnancy between September to January

Case

For which of the following patients would you recommend the RSV vaccine?

A. 71-year-old with no medical problems
B. 62-year-old with history of ESRD s/p renal transplant on tacrolimus, MMF, prednisone
C. 32-year-old pregnant woman with no medical problems at 33 weeks gestation
D. 38-year-old pregnant woman with SLE on prednisone at 14 weeks gestation

Case – October 2026

A healthy 32-year-old man presents for yearly physical. He has received 3 doses of mRNA vaccine and has had COVID twice. Last infection was 1 year ago. Courses were mild. Do you recommend the updated COVID vaccine?

A. Yes, give it now
B. No, he's young and healthy so he does not need it

Key Covid-19 concepts in 2026

- No one is immunologically naïve (most with hybrid immunity).
- Covid still poses significant risk to some people, *especially* immunocompromised.
- Hospitalization and death from Covid is low in younger, healthy individuals.
- Booster vaccines increase circulating antibodies for about 2-3 months.
- Covid does not follow the same simple seasonality profile that influenza does.

Taken together, our approach to vaccines in 2026 must be different than 2020.

Controversy #1

Covid-19 vaccine in pregnancy

"The safety and efficacy of Covid-19 vaccine during pregnancy has not been adequately studied."

False

Covid vaccines are safe in pregnancy

Safety Outcome	BNT162b2 (Pfizer)		mRNA-1273 (Moderna)	
	# Studies	Findings	# Studies	Findings
Miscarriage*	1	No safety concern	1	No safety concern
Stillbirth†	3	No safety concern	2	No safety concern
Congenital anomalies‡	1	No safety concern	1	No safety concern

*Sheth 2025. LaCroix 2025 also reported miscarriage incidence of 0.4% and 0.0% with BNT-162b2 and mRNA-1273, respectively.
†Denoble 2024, Mensah 2024, Suseeladevi 2024.
‡Jorgensen 2024. Tamir-Hostovsky 2024 also reported similar frequency of major congenital anoma
controls, 4/78 (5%) vaccinated cases. Kim 2025 found similar similar rates of congenital malformatio
births overall, 95%CI: 71-84).

CIDRAP

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Special project

Vaccine Integrity Project

Safety Outcome	BNT162b2 (Pfizer)		mRNA-1273 (Moderna)	
	# Studies	Findings	# Studies	Findings
SGA*	3 studies	No safety concern	1 study	No safety concern
Preterm birth†	3 studies: Mensah 2024 Hall 2025 Suseeladevi 2024	**Mixed, possible protective effect** **OR: 0.86 (0.83, 0.90)** aHR: 1.12 (0.88, 1.42) **aHR: 0.93 (0.87, 0.99) for 32-36 weeks,** **aHR 0.79 (0.65, 0.97) for 24-<32 weeks**	2 studies: Mensah 2024 Hall 2025	**Possible protective effect** **OR: 0.86 (0.81, 0.93)** aHR: 0.84 (0.60, 1.16)

Research Letter

Modeling the Health Impact of Discontinuing COVID-19 Vaccination During Pregnancy in the US

Nathan C. Lo, MD, PhD[1]; Yvonne Maldonado, MD[2]; Helen Y. Chu, MD, MPH[3] ; et al

» Author Affiliations | Article Information

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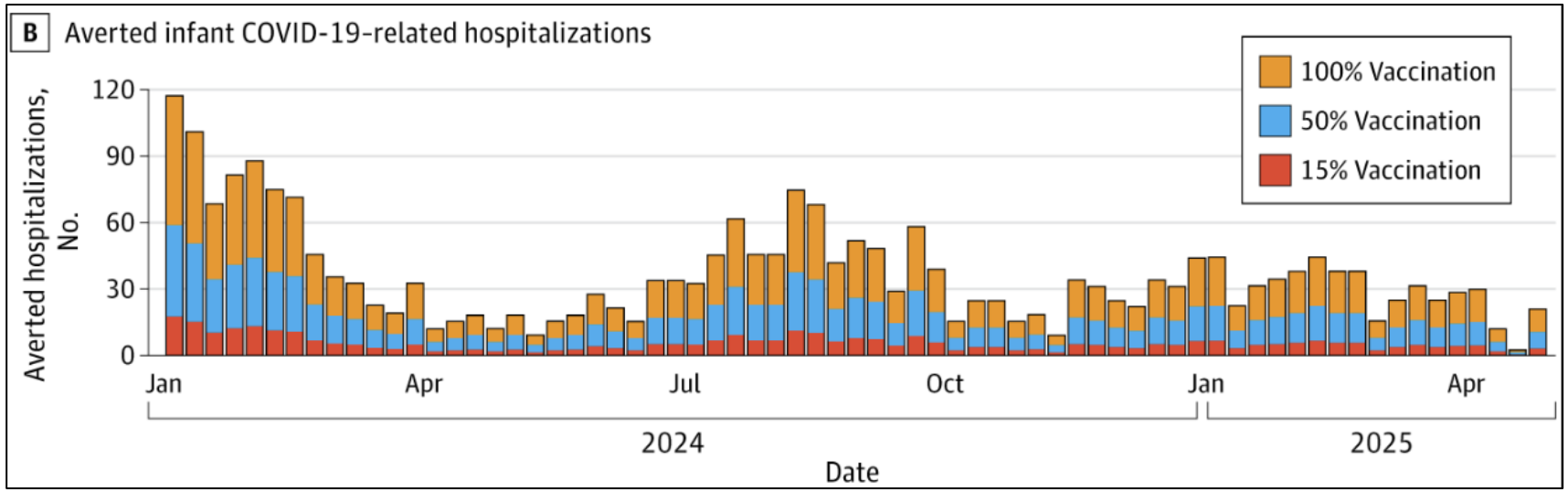


2502 hospitalizations averted in young infants
456 severe infections averted in pregnant women

"ACOG continues to recommend that all pregnant and lactating individuals receive an updated Covid-19 vaccine."

Lo NC et al. JAMA Pediatrics. Sept 2025

Controversy #2

High quality clinical data are lacking in young healthy people

"Vaccine recommendations are based largely on observational trials and antibody titer data."

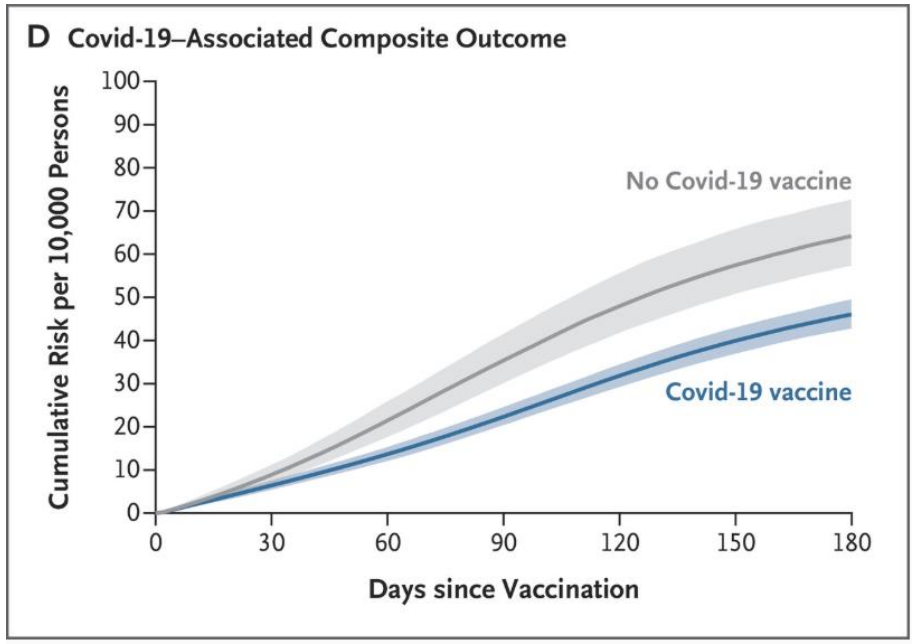
True

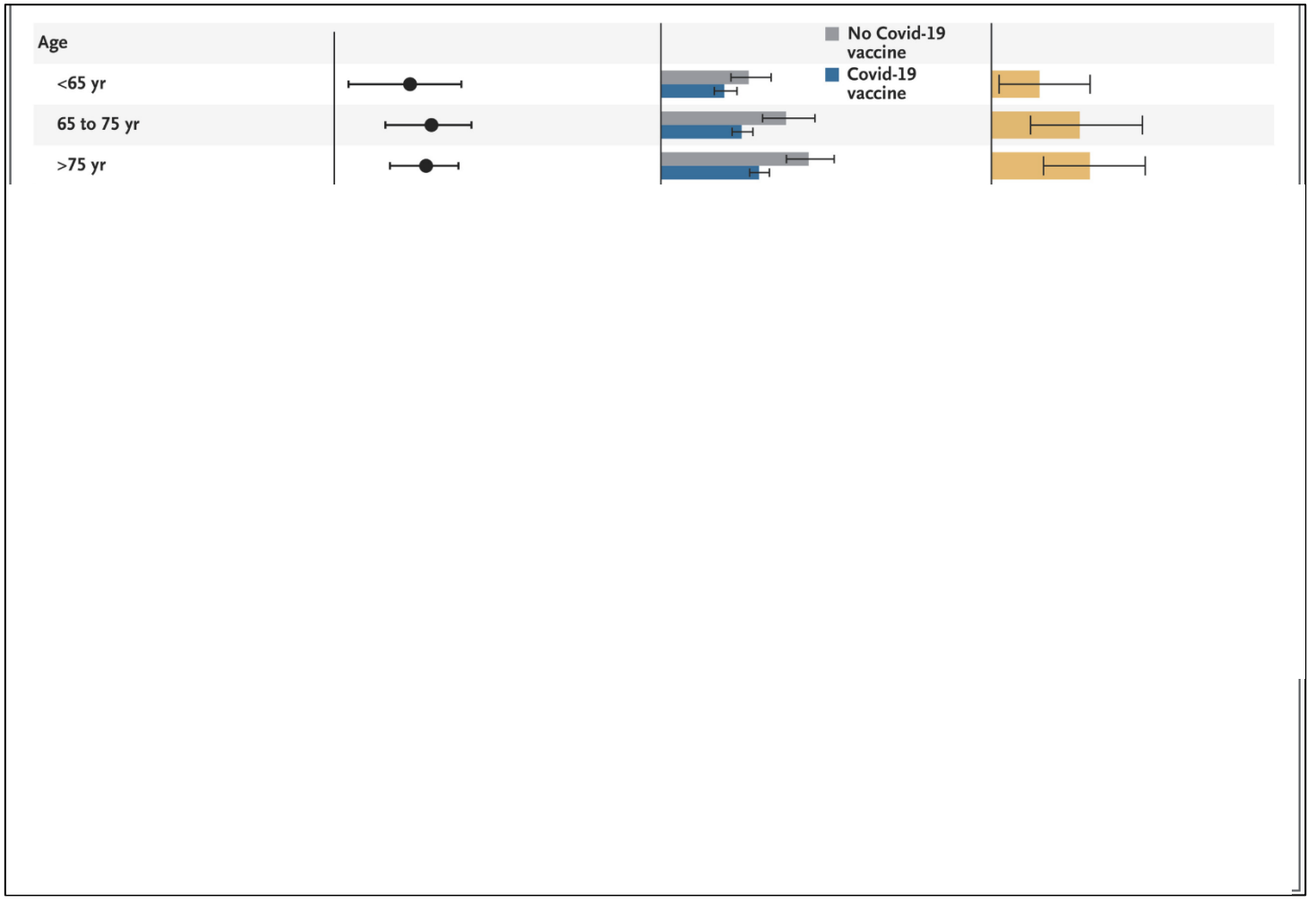
ORIGINAL ARTICLE

Association of 2024–2025 Covid-19 Vaccine with Covid-19 Outcomes in U.S. Veterans

Authors: Miao Cai, Ph.D. , Yan Xie, Ph.D. , and Ziyad Al-Aly, M.D. Author Info & Affiliations

Published October 8, 2025 | DOI: 10.1056/NEJMoa2510226 | Copyright © 2025





So…everyone should just get the vaccine, right?

Cai M et al. NEJM, Oct 2025

Further analysis

NNT to prevent…	
1 ER visit	546*
1 Hospitalization	1338*
1 Death	4545*

*Would be even higher in a young, healthy cohort

Ongoing placebo-controlled trials needed:

- Outcomes in young, healthy population
- Other endpoints: incidence of infection, sick-days averted, adverse effects, reduce severity and duration?

Cai M et al. NEJM, Oct 2025

So…should we vaccinate young healthy individuals?

- Risk for severe disease, hospitalization is low
- Clinical efficacy data is largely observational
- Risk for post-vaccine myocarditis is low but not zero
- Immunity wanes after 2-3 months and disease has multiple seasonal peaks

- Vaccine is very safe
- Severe outcomes do not always capture other important morbidity including:
  - Fever, pharyngitis, myalgias, cough
  - Lost days of school, employment
  - Risk for Long covid
  - Risk of transmission to adjacent high-risk individuals

My recommendations*

*based on my best review of available literature through the lens of my value system and risk-tolerance; you may come to a different conclusion

My recommendations*

*based on my best review of available literature through the lens of my value system and risk-tolerance; you may come to a different conclusion

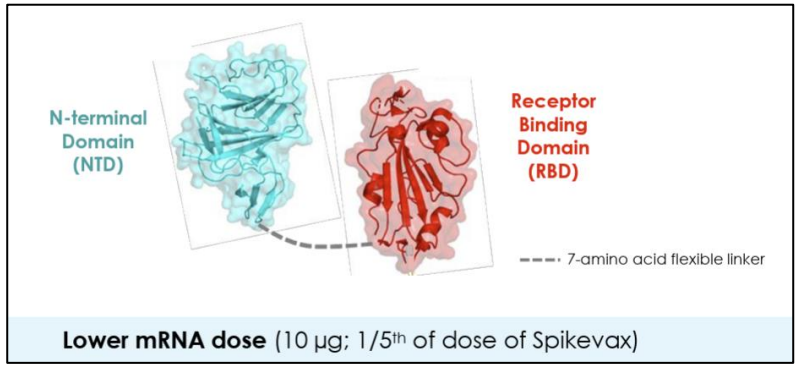
≥65 and/or with high-risk condition (including pregnancy)	• Strongly recommend • (consider q6m)
High-risk adjacent	• Recommend
General public	• Advise, shared decision making

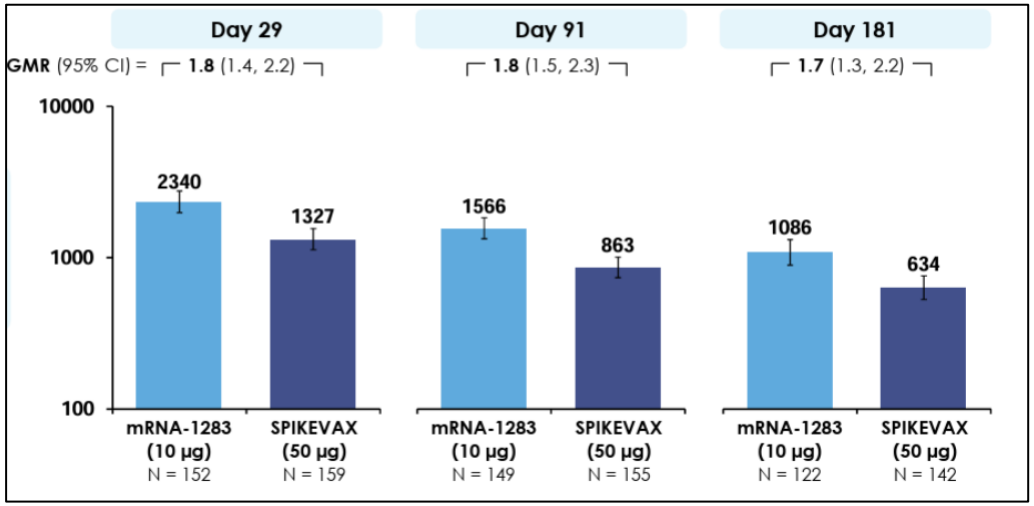
Available Covid vaccines

Oldies but goodies	Not into mRNA?	Next generation mRNA

mRNA-1283: mNEXSPIKE

- Uses only a portion of the spike protein
- Lower dose
- Higher immunogenicity over time in adults ≥ 65
- Relative efficacy favorable for individuals with co-morbidities





Participants with COVID-19, % [n/N]	mRNA-1283 (10 µg)	SPIKEVAX (50 µg)
≥ 1 comorbidities	10.2% [267/2617]	12.4% [329/2658]
And ≥ 50 Years	9.6% [169/1755]	12.4% [228/1833]
And ≥ 65 years	8.5% [78/913]	11.8% [110/929]

2025 April 15 - mRNA-1283 ACIP Presentation

Lightning Round

1. High-dose flu vaccine may not be significantly better than standard dose in older adults

ORIGINAL ARTICLE

High-Dose Influenza Vaccine Effectiveness against Hospitalization in Older Adults

Authors: Niklas Dyrby Johansen, M.D., Ph.D. , Daniel Modin, M.D. , Matthew M. Loiacono, Ph.D., Rebecca C. Harris, M.Bioch., Ph.D., Marine Dufournet, Ph.D., Carsten Schade Larsen, M.D., D.M.Sc., Lykke Larsen, M.D., Ph.D., +30 , and Tor Biering-Sørensen, M.D., M.P.H., Ph.D. Author Info & Affiliations

Published August 30, 2025 | **DOI: 10.1056/NEJMoa2509907** | **Copyright © 2025**

DANFLU-2 trial

HD = SD x4

≥65 years old

- High dose IIV
- Standard dose IIV

Primary endpoint

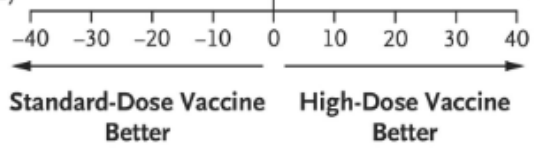
- Hospitalization for flu or pneumonia

2022–2023
2023–2024
2024–2025

N= 332,438

Johansen et al. N Engl J Med 2025

Subgroup	High-Dose Vaccine	Standard-Dose Vaccine	Relative Vaccine Effectiveness (95.2% CI)
	no. of events/total no. (%)		
Overall	1138/166,218 (0.68)	1210/166,220 (0.73)	5.9 (–2.1 to 13.4)
Age			
<72.9 yr	357/83,173 (0.43)	349/83,141 (0.42)	–2.3 (–19.0 to 12.1)
≥72.9 yr	781/83,045 (0.94)	861/83,079 (1.04)	9.3 (–0.2 to 17.8)
Sex			
Female	484/80,781 (0.60)	500/80,757 (0.62)	3.2 (–10.0 to 14.9)
Male	654/85,437 (0.77)	710/85,463 (0.83)	7.9 (–2.7 to 17.3)
Presence of at least one chronic disease			
No	218/77,381 (0.28)	213/77,279 (0.28)	–2
Yes	920/88,835 (1.04)	997/88,934 (1.12)	7
Diabetes			
No	890/144,287 (0.62)	942/144,267 (0.65)	5
Yes	248/21,929 (1.13)	268/21,952 (1.22)	7
Cardiovascular disease			
No	564/120,528 (0.47)	614/120,875 (0.51)	7
Yes	574/45,688 (1.26)	596/45,338 (1.31)	4
Cancer			
No	843/143,294 (0.59)	894/143,217 (0.62)	5
Yes	295/22,922 (1.29)	316/22,996 (1.37)	6
Chronic lung disease			
No	787/152,641 (0.52)	840/152,636 (0.55)	6
Yes	351/13,575 (2.59)	370/13,577 (2.73)	5.1 (–10.2 to 18.3)
Immunosuppression			
No	984/159,029 (0.62)	1025/159,085 (0.64)	4.0 (–5.0 to 12.2)
Yes	154/7187 (2.14)	185/7128 (2.60)	17.4 (–3.0 to 33.9)
Coadministration with Covid-19 vaccine			
No	436/63,974 (0.68)	482/63,732 (0.76)	9.9 (–2.9 to 21.1)
Yes	702/102,242 (0.69)	728/102,481 (0.71)	3.3 (–7.4 to 13.1)



In this trial, a high-dose influenza vaccine **did not** result in a significantly lower incidence of hospitalization among older adults.

Lightning Round

1. High-dose flu vaccine may not be significantly better than standard dose in older adults
2. One dose of HPV vaccine may be non-inferior to two doses in children

ORIGINAL ARTICLE

Noninferiority of One HPV Vaccine Dose to Two Doses

Authors: Aimée R. Kreimer, Ph.D., Carolina Porras, M.S., Danping Liu, Ph.D., Allan Hildesheim, Ph.D., Loretto J. Carvajal, M.D., Rebeca Ocampo, M.D., Byron Romero, M.D., +21 , and Rolando Herrero, M.D. Author Info & Affiliations

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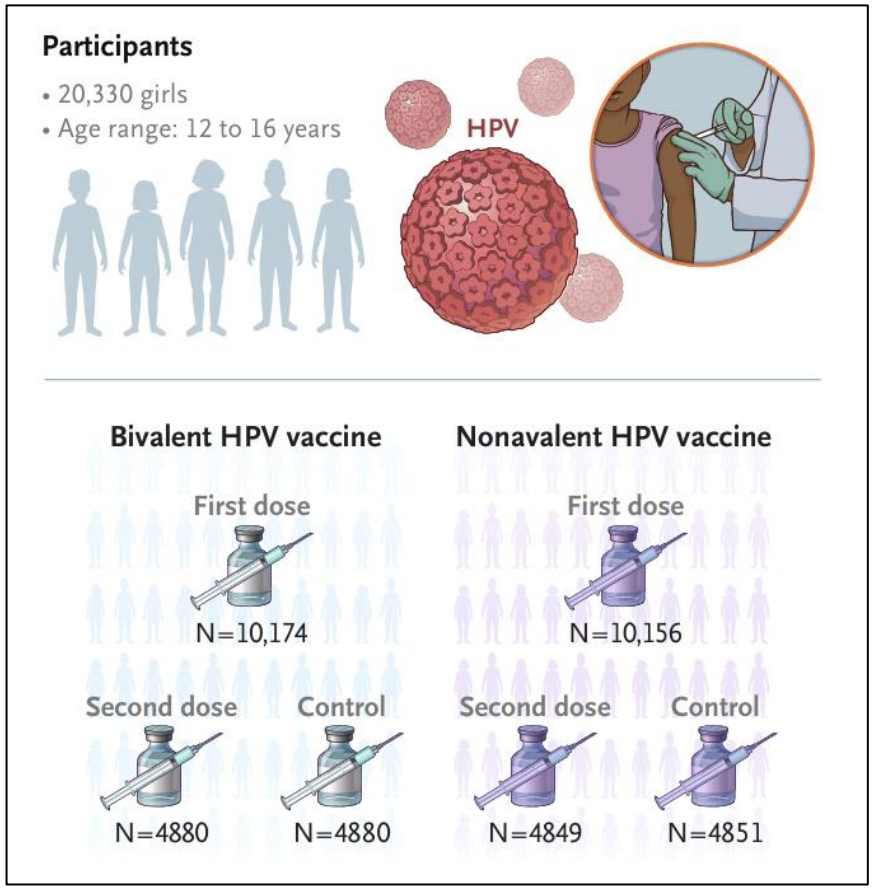
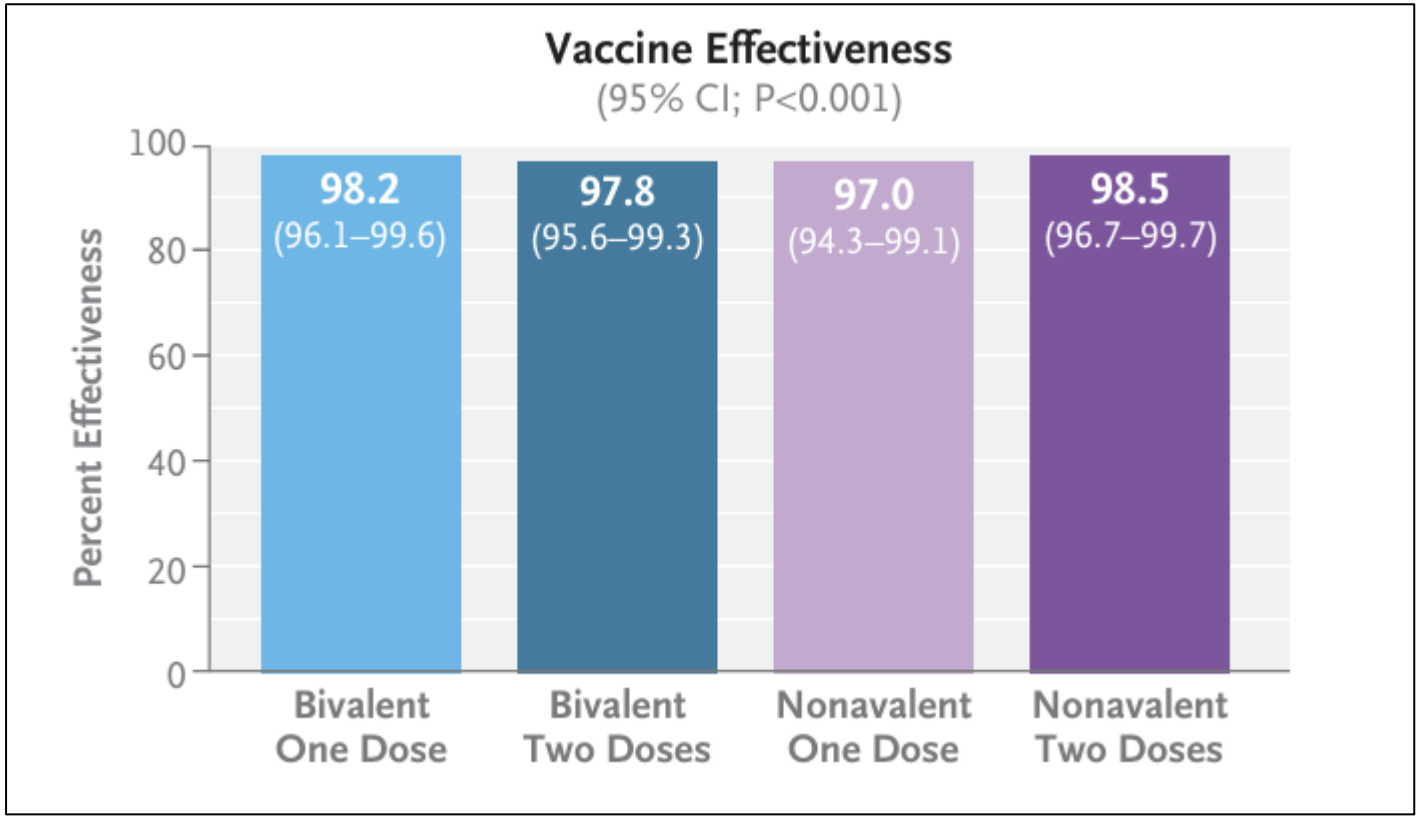
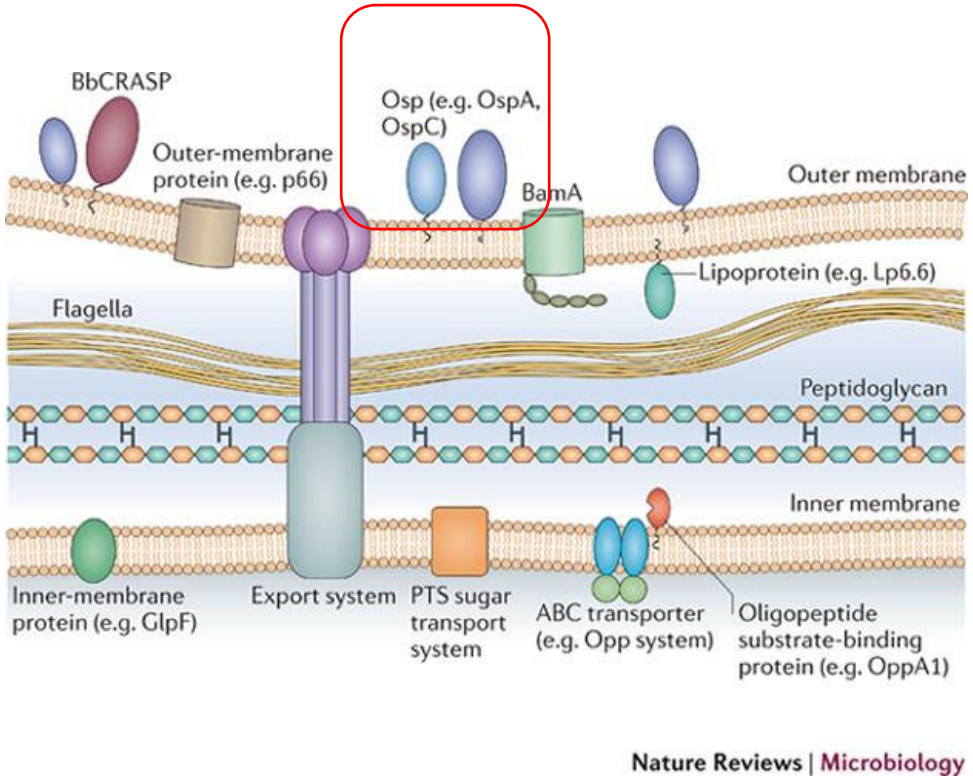




Lightning Round

1. High-dose flu vaccine may not be significantly better than standard dose in older adults
2. One dose of HPV vaccine is non-inferior to two doses in children
3. Lyme vaccine may be on the horizon

VALOR:
Vaccine Against Lyme Disease for Outdoor Recreationists



- Phase 3 study of a 6-valent Lyme vaccine (LBV6)
- Target: OspA
- Series: 0 months, 2 months, 6 month supported by phase 2 data
- Disease endemic areas in Europe and U.S
- Outcomes: RR of confirmed Lyme, antibody response

Wagner Laura et al. Lancet ID. 2025

Pfizer and Valneva Announce Lyme Disease Vaccine Candidate Demonstrates Strong Efficacy in Phase 3 VALOR Trial

Monday, March 23, 2026 - 06:45am

Efficacy of 73.2% from 28 days post-dose 4 (season 2) (95% CI 15.8, 93.5)

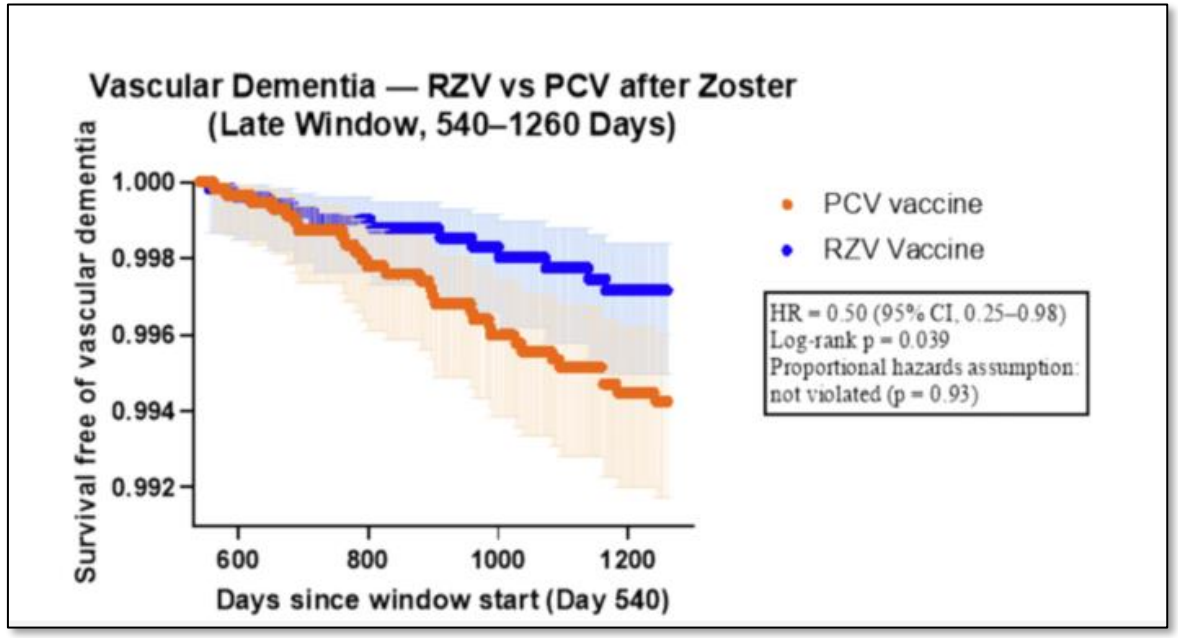
Lyme vaccine may be on the horizon!

Lightning Round

1. High-dose flu vaccine may not be significantly better than standard dose in older adults
2. One dose of HPV vaccine is non-inferior to two doses in children
3. Lyme vaccine may be on the horizon
4. RZV (Shingrix) may decrease the risk of vascular dementia after herpes zoster infection

After herpes zoster infection, adverse events were lower in people who had received the vaccine

- Herpes Zoster is not just a disease of the skin, it is a systemic inflammatory event
- VZV has a tropism for vasculature (arterial walls)
- RZV has >90% efficacy in preventing zoster
- For people who have breakthrough infections, does prior vaccination attenuate vascular and cognitive complications?



Lightning Round

1. High-dose flu vaccine may not be significantly better than standard dose in older adults
2. One dose of HPV vaccine is non-inferior to two doses in children
3. Lyme vaccine may be on the horizon
4. RZV (Shingrix) may decrease the risk of vascular dementia after herpes zoster infection
5. Vaccine pearls for the immunocompromised

Vaccine pearls for immunocompromised patients

- Low efficacy during periods intense immunosuppression
- Vaccinate BEFORE the need for immunosuppression (when possible)
- Ideally 2 weeks before initiation or resumption of immunosuppression
- B-cell depleting therapies: aim for 4 weeks prior to the next scheduled dose
- Some data support lightening immunosuppression leads to higher efficacy
- Live viral vaccines (MMR, Varicella): suspend immunosuppression x1 month, give vaccine, wait another month, restart immunosuppression
- Make sure to vaccine household contacts

Kuhn T et al, Transplantation 2023 107:1139-1150

Key Points

- PCV-21 – one and done
- RSV recommended for:
  - 75 and older
  - 50-75 with underlying medical condition
  - Pregnant women in 3rd trimester
- Covid vaccine – let's focus our energy on highest risk individuals
- Use trusted resources to find up to date vaccine information:
  - American Academy of Pediatrics for children and adolescents
  - American Academy of Family Physicians for fall vaccine guidance for healthy adults
  - American College of Gynecologists for pregnant and lactating women
  - Infectious Disease Society of America for immunocompromised hosts

- Vaccines continue to be the best preventative tool to protect our patients and our communities. Your voice matters.

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