Vaccines in 2025: Promise and Perils

Daniel A. Solomon, M.D.
Division of Infectious Diseases
Brigham and Women's Hospital
Assistant Professor of Medicine
Harvard Medical School

Daniel A. Solomon, MD

- Yale University School of Medicine
- Residency at Brigham and Women's Hospital
- Infectious Disease Fellowship at BWH/MGH combined program
- Assistant Professor of Medicine at Harvard Medical School
- Associate Program Director, MGH/BWH Infectious Diseases Fellowship
- Associate Director of Clinical Learning in Health Sciences and Technology Track at Harvard Medical School

Disclosures

I have no financial disclosures.

I love vaccines.

Key resources

- **CDC ACIP adult vaccine schedules**
- **Immunize.org "Ask the Experts"**

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2021

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
Influenza inactivated (IIV) or **Influenza recombinant** (RIV4)	1 dose annually			
Influenza live, attenuated (LAIV4)	1 dose annually			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)			2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal conjugate (PCV13)	1 dose			1 dose
Pneumococcal polysaccharide (PPSV23)	1 or 2 doses depending on indication			1 dose
Hepatitis A (HepA)	2 or 3 doses depending on vaccine			
Hepatitis B (HepB)	2 or 3 doses depending on vaccine			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
***Haemophilus influenzae* type b** (Hib)	1 or 3 doses depending on indication			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

No recommendation/ Not applicable

Meet the Experts from the Immunization Action Coalition

Kelly L. Moore, MD, MPH
President and Chief Executive Officer

Carolyn B. Bridges, MD, FACP; Director for Adult Immunization

Iyabode Beysolow, MD, MPH, FAAP; Physician Consultant

The Immunization Action Coalition acknowledges with gratitude **Deborah L. Wexler, MD**, executive director emerita, who established "Ask the Experts" more than 25 years ago, and **William L. Atkinson, MD, MPH**, who contributed his expertise to this popular feature over many years while he was at the Centers for Disease Control and Prevention and later at IAC.

Learning Objectives

Upon completion of this activity, participants will be able to:

- Advise patients regarding new vaccine recommendations
- Explain the reasoning behind changes
- Evaluate data behind recent changes in vaccine guidelines
- Assess areas of controversy

CNN health | Life, But Better | Fitness | Food | Sleep | Mindfulness | Relationships

FDA approves first vaccine for RSV, a moment six decades in the making

By Brenda Goodman, CNN
Updated 3:56 PM EDT, Wed May 3, 2023

WHO recommends R21/Matrix-M vaccine for malaria prevention in updated advice on immunization

2 October 2023 | News release | Geneva |Reading time: 5 min (1351 words)

The Updated COVID Vaccines Are Here: 10 Things to Know

BY KATHY KATELLA OCTOBER 4, 2023

Pfizer and Valneva Initiate Phase 3 Study of Lyme Disease Vaccine Candidate VLA15

Monday, August 08, 2022 - 04:45pm

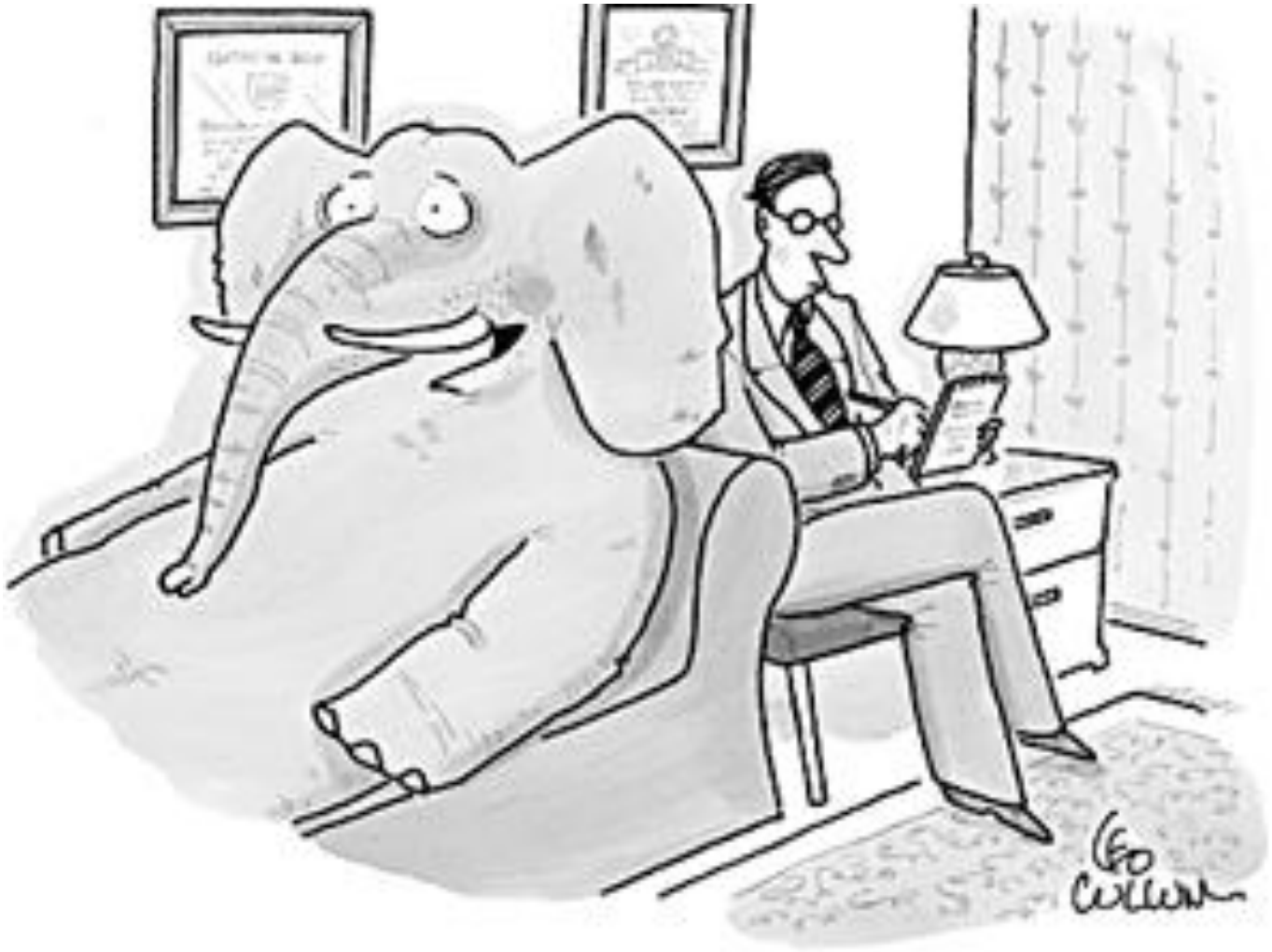
NEWS | 02 October 2023

Pioneers of mRNA COVID vaccines win medicine Nobel

Katalin Karikó and Drew Weissman laid the groundwork for immunizations that were rolled out during the pandemic at record-breaking speed.

Ewen Callaway & Miryam Naddaf

Drew Weissman (left) and Katalin Karikó (right). Credit: PixelPro/Alamy



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

Not everyone loves vaccines as much as I do

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…

- 2019: 1,282 measles cases United States
- 2025: >700 cases (through April 15), active outbreaks in 6 states

Measles cases surge worldwide, infecting 10.3 million people in 2023

RELEASE

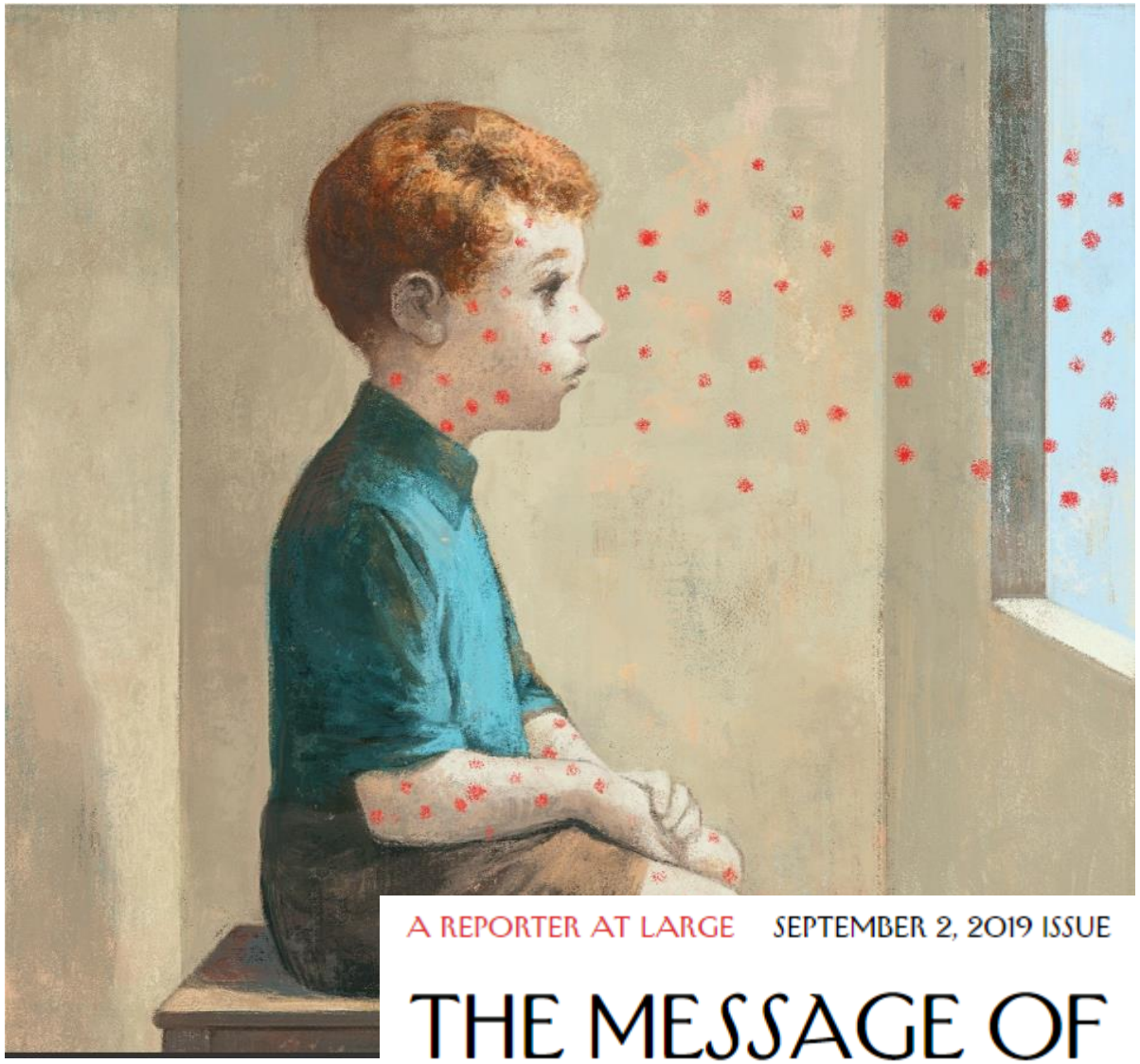
For immediate release: November 14, 2024

CDC Media Relations

(404) 639-3286

media@cdc.gov

https://www.cdc.gov/media/



A REPORTER AT LARGE SEPTEMBER 2, 2019 ISSUE

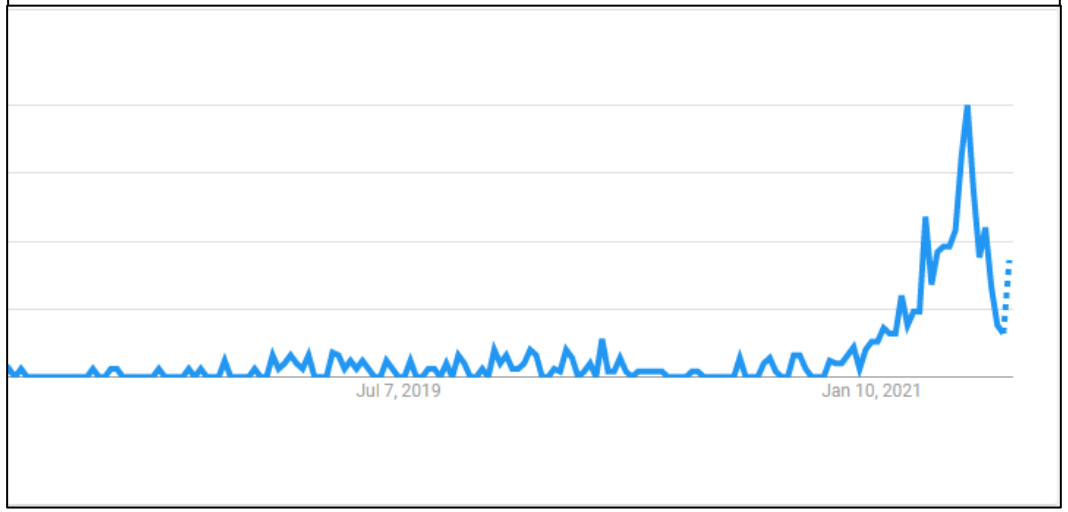
THE MESSAGE OF MEASLES

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.”

“Vaccine hesitancy”



Survey reveals low trust in US public health agency information amid pandemic

Mary Van Beusekom, MS, March 7, 2023

Topics: COVID-19

“Those who do not remember the past are condemned to repeat it.”

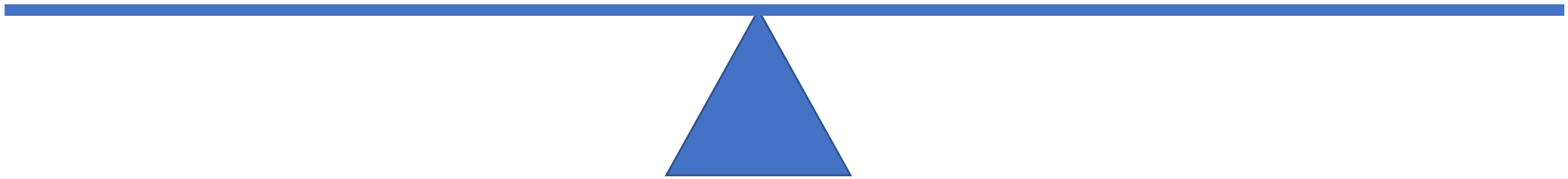
- June 2022: Immunocompetent un-vaccinated young adult presents with fever, neck stiffness, back and abdominal pain, and flaccid weakness
- Stool specimen revealed poliovirus, confirmed by CDC
- First case of poliomyelitis in US since 2013
- Rockland County has reported overall low vaccine coverage for over 20 years
- In summer 2022, 60% of children under 2 years of age had received 3 doses of IPV
  - Zip code level as low as 37%)

Data reported June 21, 2023

Vaccines in 2025: 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



Roadmap

- MMR
- RSV
- Pneumococcus
- COVID-19

Case

My patient was born in 1986. He is going to a new graduate program, so I checked a measles titer which was negative. His immunization record shows that he had one dose of MMR in childhood. What do you advise?

A. Give booster MMR
B. Give booster MMR then recheck titer 1-2 months later
C. Documentation of 1 vaccine supersedes negative titers, no need for another shot

What counts as presumptive immunity?

ANY of the following

- Birth before 1957
- Laboratory confirmation of measles
  (verbal history does not count)
- Laboratory evidence of immunity
- Written documentation of adequate vaccination*

https://www.medinaction.com/your-immune-system-vaccines-and-traveling/

Adults – One Dose or Two?

- 1957-1989: one dose
- 1989: changed to two dose series

Number of doses	Seroprotection
1	93%
2	97%

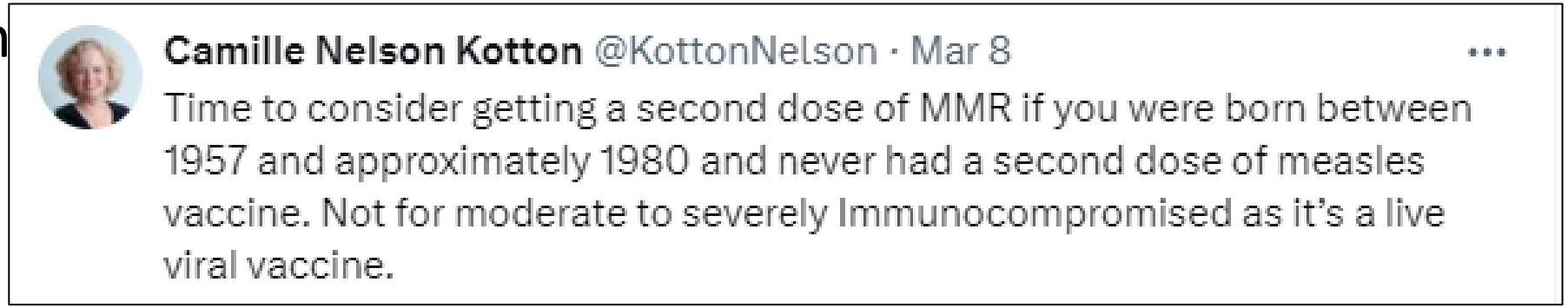
<u>One dose is considered sufficient, except for:</u>

- Healthcare personnel
- International travelers
- Persons attending college or other post-high school institution

E-consult

My patient was born in 1986. He is going to a new graduate program, so I checked a measles titer which was negative. His immunization record shows that he had one dose of MMR in childhood. What do you advise?

A. Give booster MMR
B. Give booster MMR then recheck titer 1-2 months later
C. Documentation of 1 vaccine supersedes negative titers, no need for another sh



What to do with negative serologies?

http://mylifepath.info/

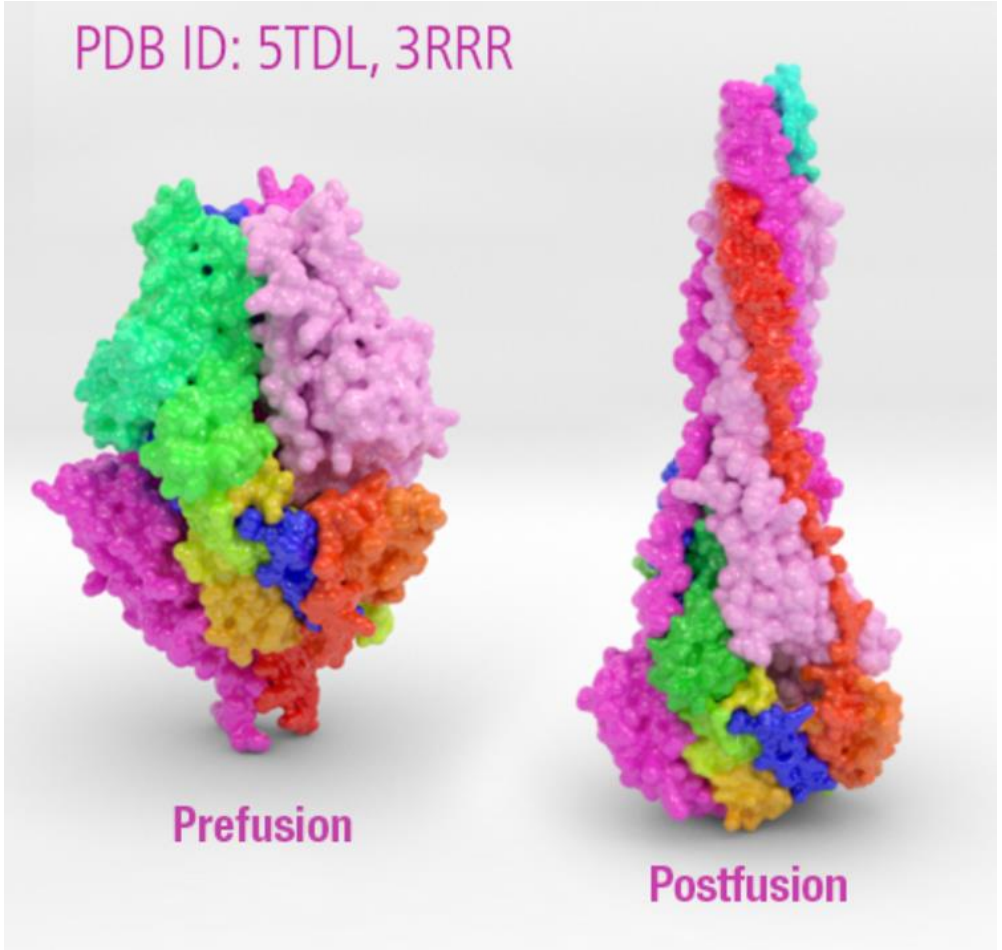
- Sensitivity of serology only ~80%
- Probably less sensitive to detect vaccine-induced immunity
- Age-appropriate documented vaccination, trumps post-vaccination titers

Case

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

A. 71-year-old with no medical problems, exercises 7 days/week
B. 81-year-old with no medical problems, exercises 7 days/week
C. 65-year-old with history of ESRD s/p renal transplant on tacrolimus, MMF, prednisone
D. 58-year-old with DM2, COPD and CHF
E. 32-year-old pregnant woman with no medical problems at 33 weeks gestation
F. 38-year-old pregnant woman with SLE on prednisone at 14 weeks gestation

RSV F-protein



ORIGINAL ARTICLE

Respiratory Syncytial Virus Prefusion F Protein Vaccine in Older Adults

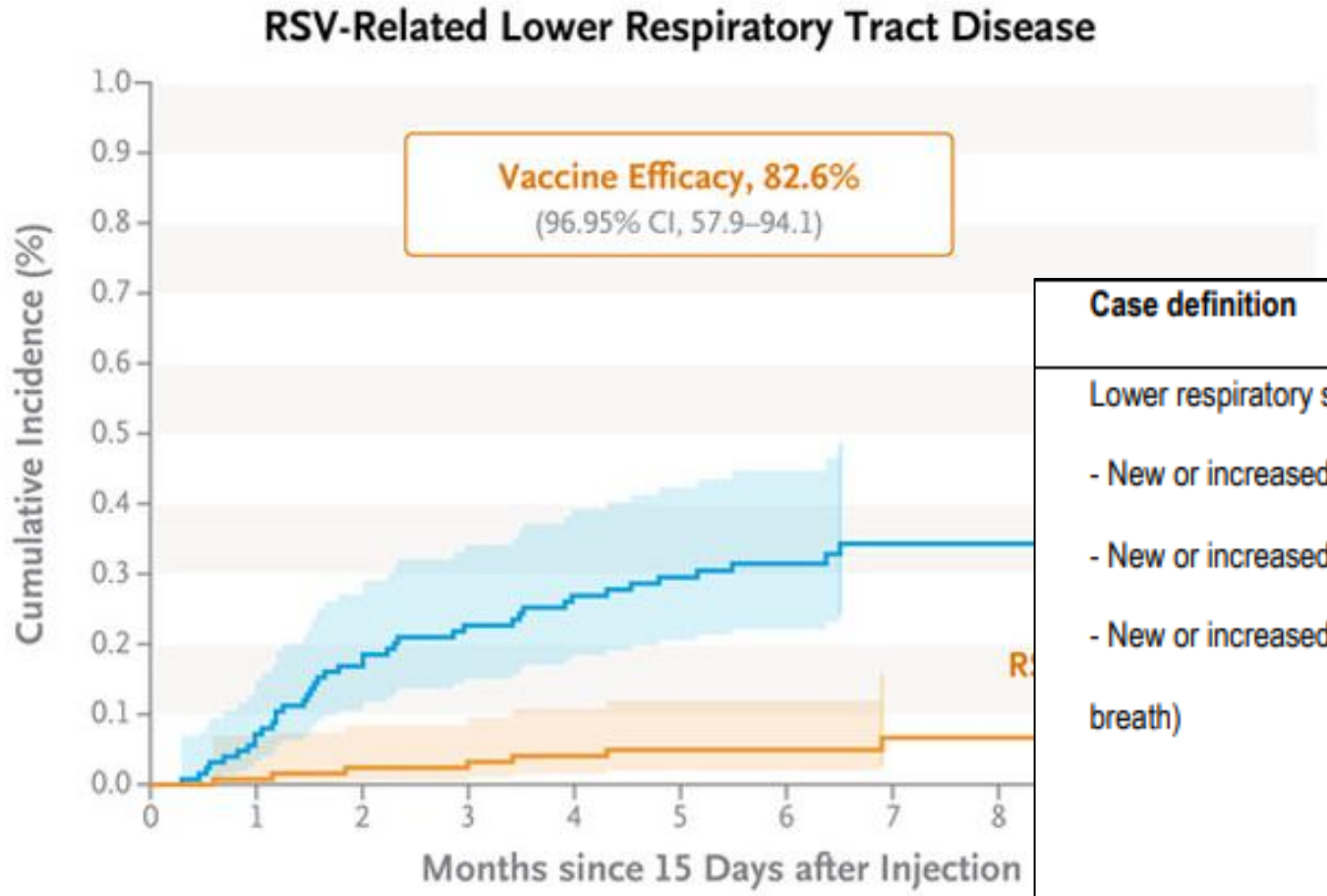
Alberto Papi, M.D., Michael G. Ison, M.D., Joanne M. Langley, M.D., Dong-Gun Lee, M.D., Ph.D., Isabel Leroux-Roels, M.D., Ph.D., Federico Martinon-Torres, M.D., Ph.D., Tino F. Schwarz, M.D., Ph.D., Richard N. van Zyl-Smit, M.D., Ph.D., Laura Campora, M.D., Nancy Dezutter, Ph.D., Nathalie de Schrevel, Ph.D., Laurence Fissette, M.S., et al., for the AReSVi-006 Study Group*

- Monovalent vaccine (GSK)
- Uses same adjuvant as RZV (Shingrix), but lower dose
- Adults ≥ 60
- 25,000 participants from 17 countries
- Randomized to vaccine vs placebo before RSV season
- Immunocompromised patients excluded

Age range	% participants
60-69	56
70-79	36
>/=80	8

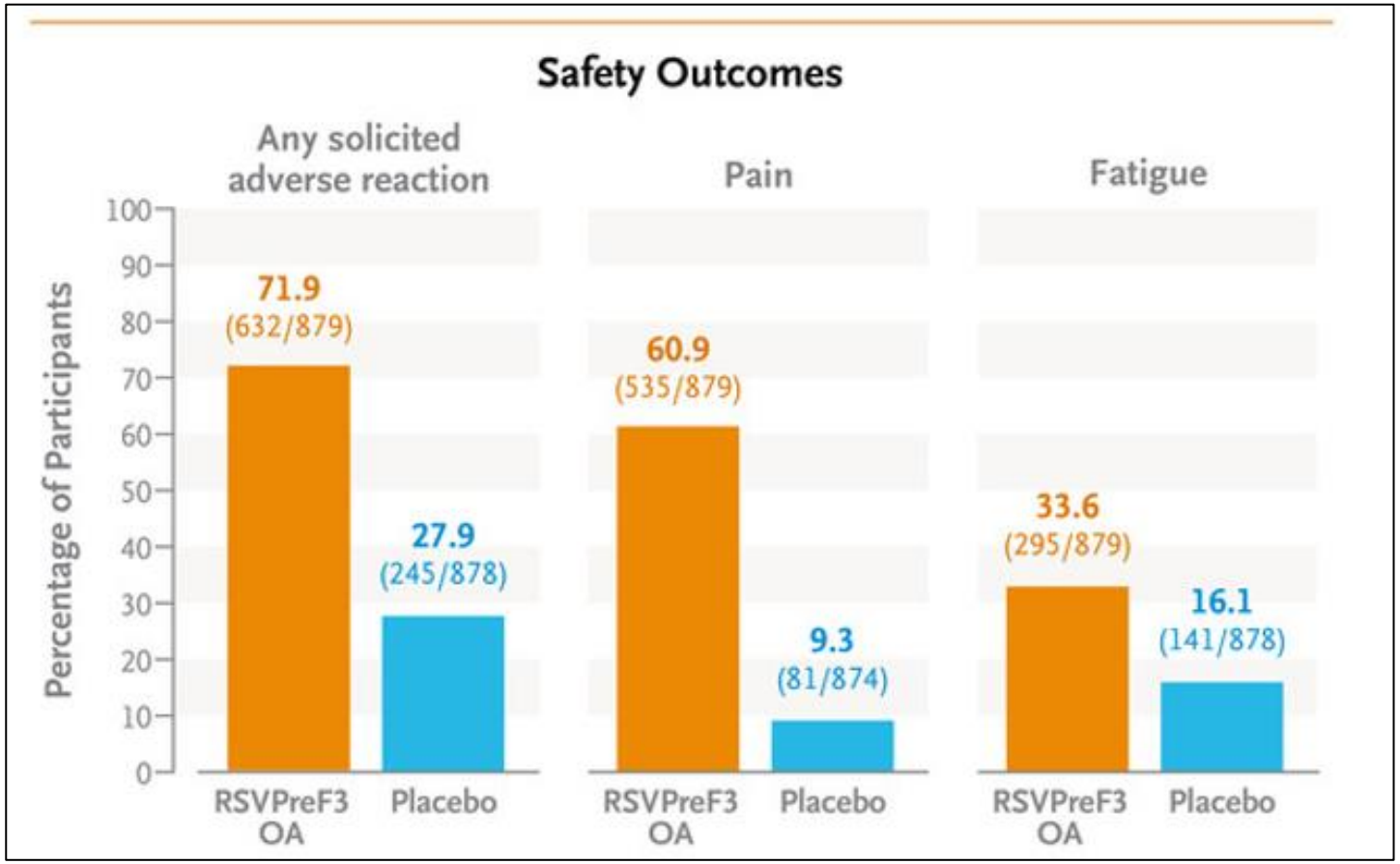
Frailty status	% participants
Fit	60
Pre-frail	38
Frail	1.5

Papi A et al. *New Engl J Med* 2023



Case definition	
Lower respiratory symptoms - New or increased sputum - New or increased cough - New or increased dyspnea (shortness of breath)	Lower respiratory signs - New or increased wheezing[c] - New or increased crackles/ronchi[d] based on chest auscultation - Respiratory rate ≥20 respirations/min[d] - Low or decreased oxygen saturation (= oxygen saturation <95% or ≤90% if pre-season baseline is <95%)[d] - Need for oxygen supplementation[d]

Papi A et al. *New Engl J Med* 2023



3 Inflammatory neurologic events

- 1 case of GBS
- 2 cases of ADEM

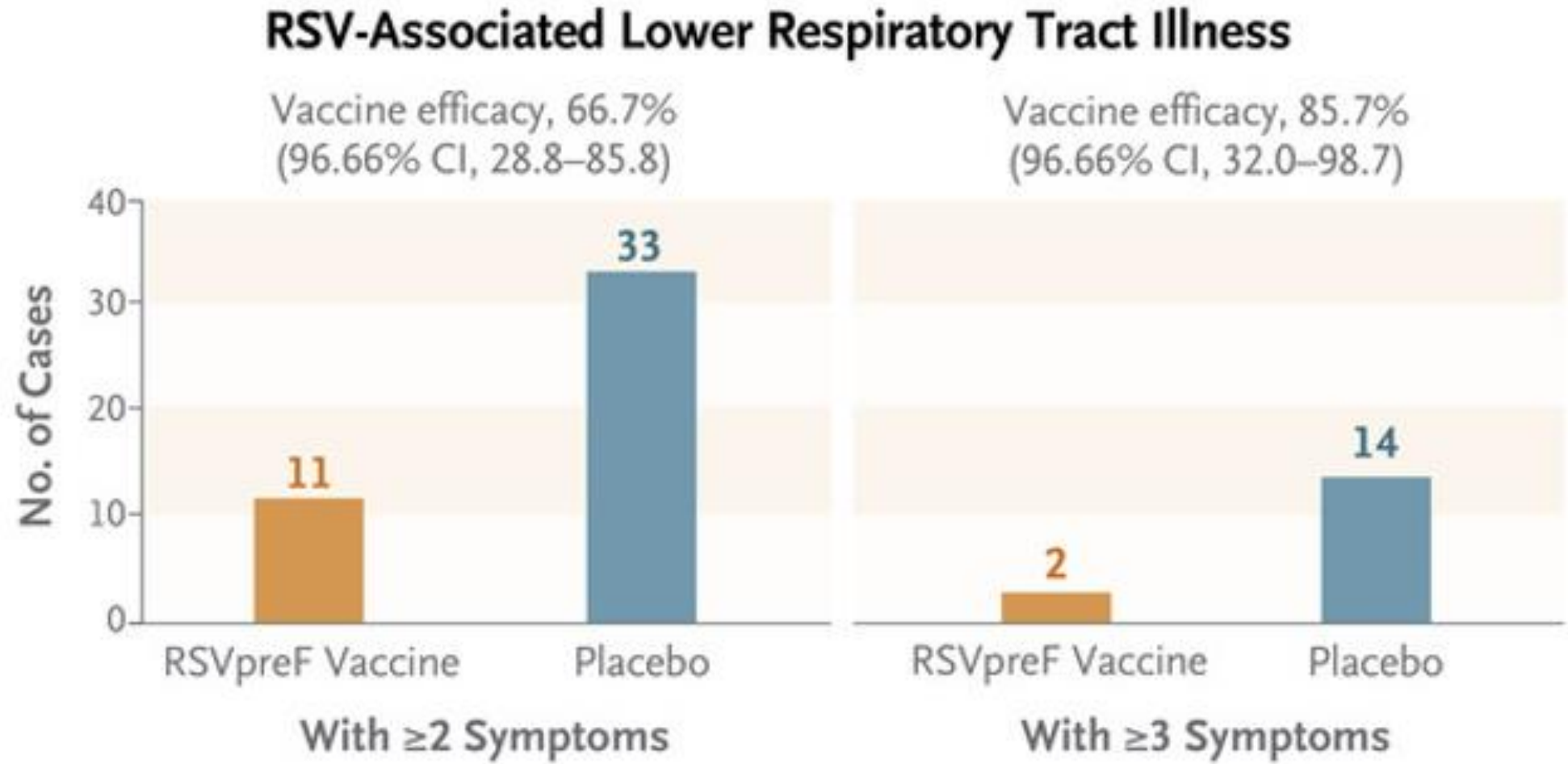
RENOIR: RSV vaccine Efficacy study iN Older adults Immunized against RSV disease

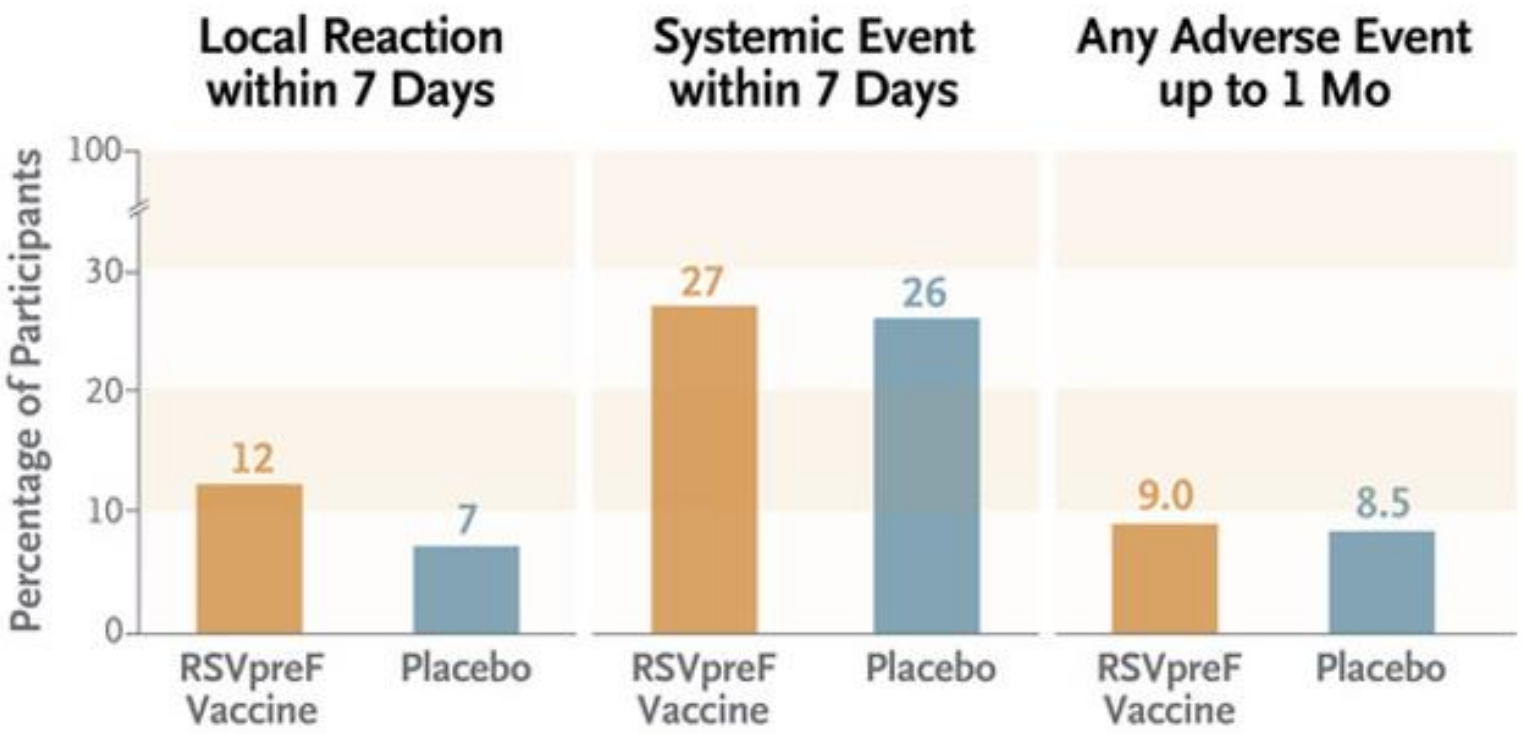
- Bivalent vaccine (Pfizer)
- No adjuvant
- Individuals 60 years and older
- ~34,000 participants
- Randomized to vaccine vs placebo before RSV season
- Immunocompromised patients excluded

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-Associated Lower Respiratory Tract Illness
Vaccine efficacy, 66.7%
(96.66% CI, 28.8–85.8)
Vaccine efficacy, 85.7%
(96.66% CI, 32.0–98.7)
No. of Cases
40
30
20
10
0
11
33
2
14
RSVpreF Vaccine
Placebo
RSVpreF Vaccine
Placebo
With ≥2 Symptoms
With ≥3 Symptoms



3 Inflammatory neurologic events

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

May 3, 2023

CNN health Life, But Better Fitness Food Sleep Mindfulness Relationships

FDA approves first vaccine for RSV, a moment six decades in the making

By Brenda Goodman, CNN

Updated 3:56 PM EDT, Wed May 3, 2023

June, 2023

ACIP Advisory panel vote:

- **Shared decision making for anyone ≥ 60**

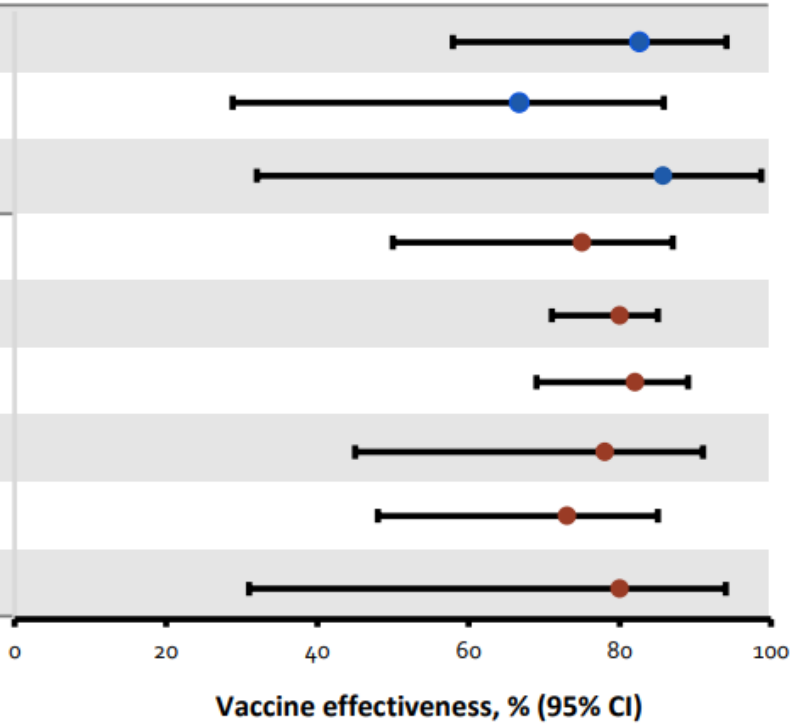
RSV vaccine: limitations

- 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
  - Boosters after 2 years under investigation

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

RSV vaccine efficacy

		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

Limitations of observational VE studies

- RSV vaccine uptake in study populations was 5-10%
  - Early adopters of new vaccines may have different healthcare-seeking behaviors than gen population which could bias VE estimates upwards
- Definitions of immunocompromise varied across studies and studies were not powered to assess VE for specific types of immunosuppression
- Insufficient follow-up time to determine duration of RSV vaccine effectiveness beyond 1 season

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

ACIP June 2024

- 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 conductive 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

June, 2024

ACIP June 2024

ACIP Advisory panel vote:

1. One dose RECOMMENDED for anyone age 75 and older

2. One dose RECOMMENDED for 60-74 who are at high risk for severe RSV disease

3. For people 60-74 who are NOT at risk for severe RSV disease, RSV vaccine is NOT RECOMMENDED.

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.

Late Breaker!!!

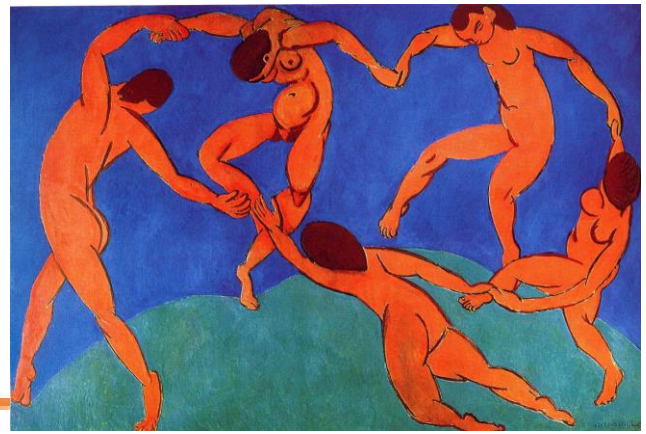
News › FDA

Pfizer Wins FDA Approval of RSV Vaccine for Broader Adult Population

October 23, 2024 | 2 min read | Tristan Manalac

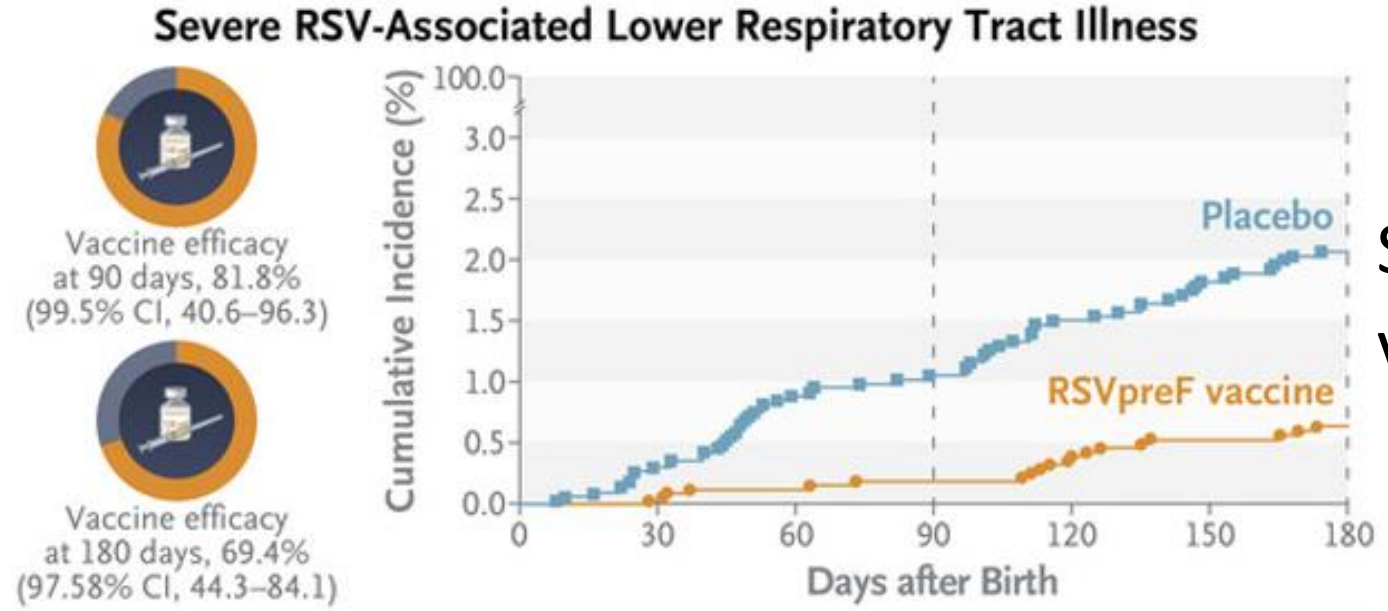
- Abrysvo approved by FDA for use in adults 18-59 years old at increased risk for lower respiratory tract disease
- ACIP has not weighed in on this recommendation yet

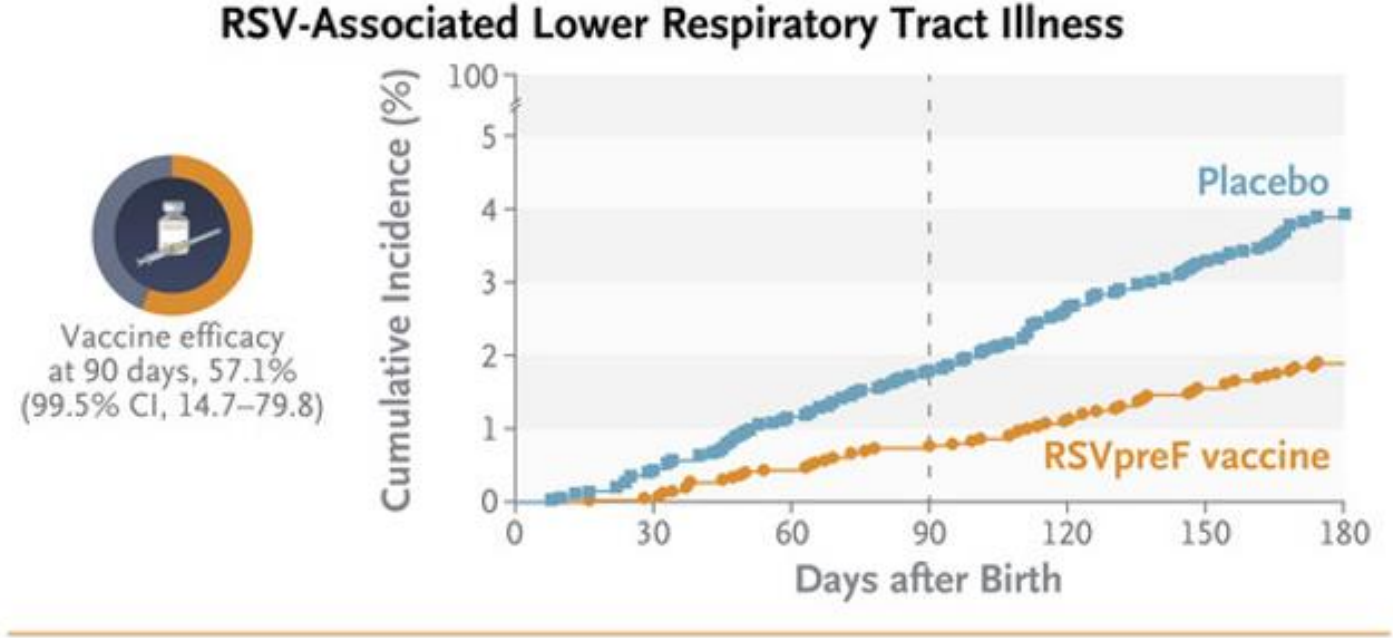
MATISSE: MATernal Immunization Study for Safety and Efficacy



- 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

For pregnant women, CDC and ACOG *recommend*:

Seasonal administration of one dose of RSV vaccine 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, exercises 7 days/week
B. 81-year-old with no medical problems, exercises 7 days/week
C. 65-year-old with history of ESRD s/p renal transplant on tacrolimus, MMF, prednisone
D. 58-year-old with history of ESRD s/p renal transplant on tacrolimus, MMF, prednisone
E. 32-year-old pregnant woman with no medical problems at 33 weeks gestation
F. 38-year-old pregnant woman with SLE on prednisone at 14 weeks gestation

Pneumococcal vaccine Case series

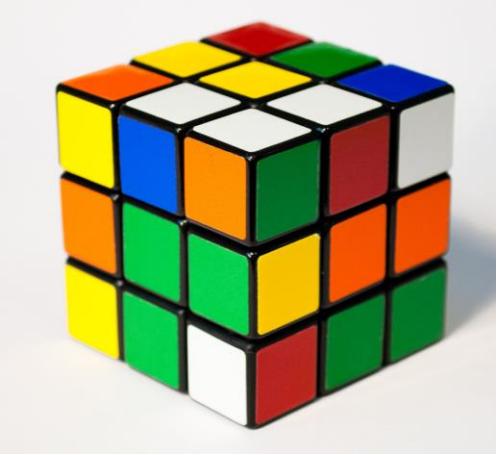
What pneumococcal series, including booster, does each patient need?

65-year-old with no medical problems.

52-year-old with no medical problems.

20-year-old with cochlear implants

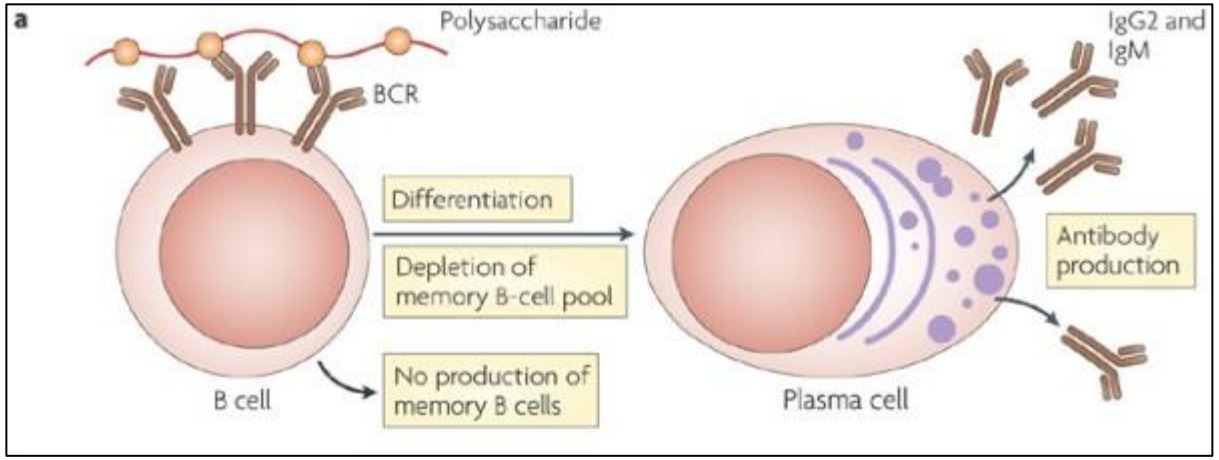
26-year-old with sickle cell disease and functional asplenia

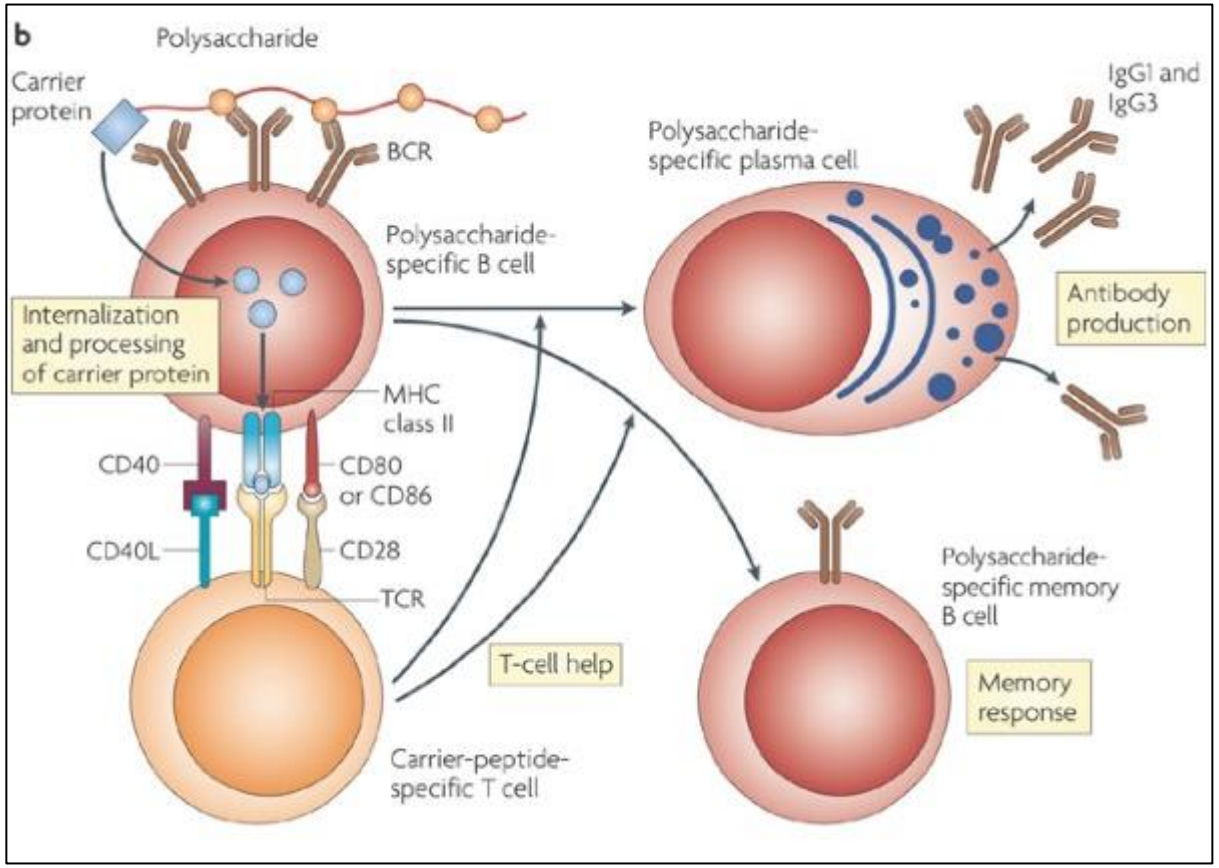


26-year-old with multiple sclerosis on ocrelizumab

Polysaccharide vaccines (eg PPSV)
composed of polysaccharides that resemble pneumococcal serotypes, produce Abs

Conjugated vaccines (eg PCV)
joins protein to polysaccharide chain. Protein brings in T cell help & leads to memory B cells





New Pneumococcal Vaccines, 2022

- Pneumococcal 15-valent conjugative vaccine (PCV15, Merck)
  - Studied as a series, followed by PPSV-23 (pneumovax)
- Pneumococcal 20-valent conjugate vaccine (PCV20, Pfizer)
  - Studied as a single, stand-alone pneumococcal vaccine

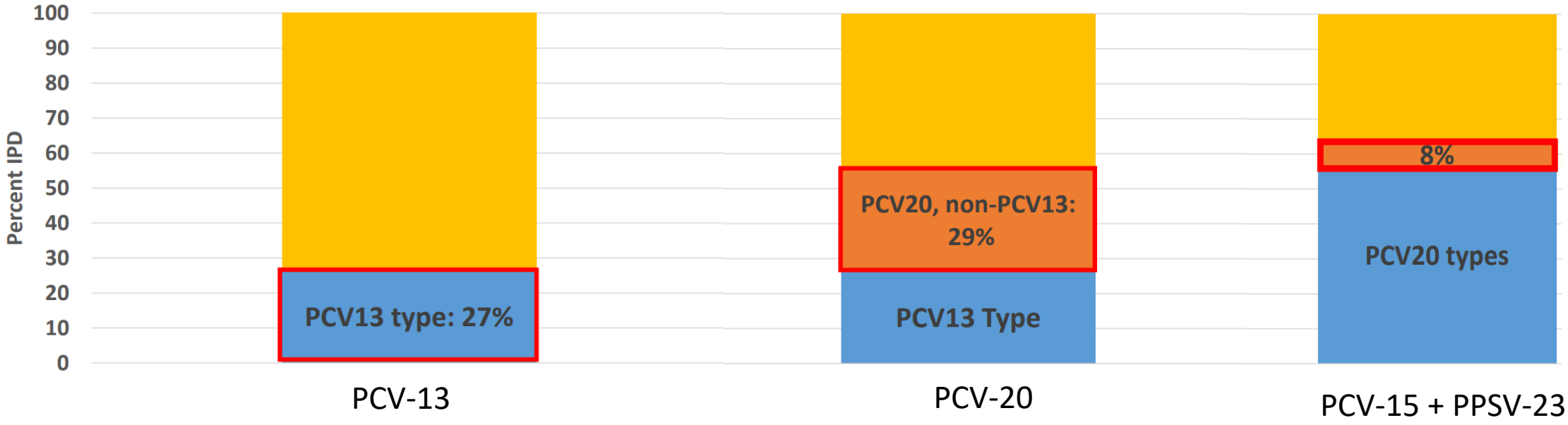
Kobayashi M et al. *MMWR*. January 28, 2022

Serotypes contained in pneumococcal vaccines

PCV-20 vs PCV-15 + PPSV-23

Favors PCV-15 + PPSV-23

- Provides broader serotype coverage

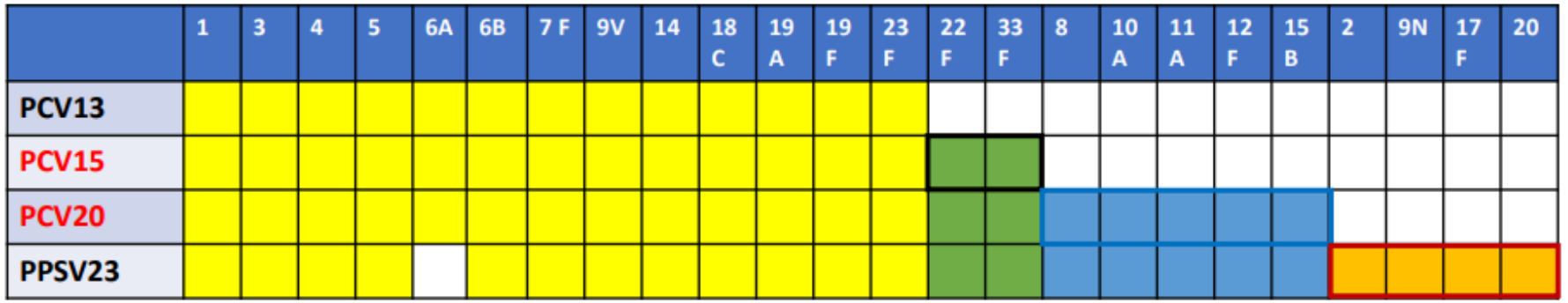


PCV-20 vs PCV-15 + PPSV-23

Favors PCV-20

- Easy! One and done.
- Expected to provide better protection than PPSV-23 for the shared serotypes

Serotypes Contained in Current and New Pneumococcal Vaccines



Outcome: PCV-20 vs PCV-15 + PPSV-23

Not enough data to state preference

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

*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

June, 2024

ACIP June 2024

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

Wait…PCV 21???

PCV-21 is not just PCV-20 + 1

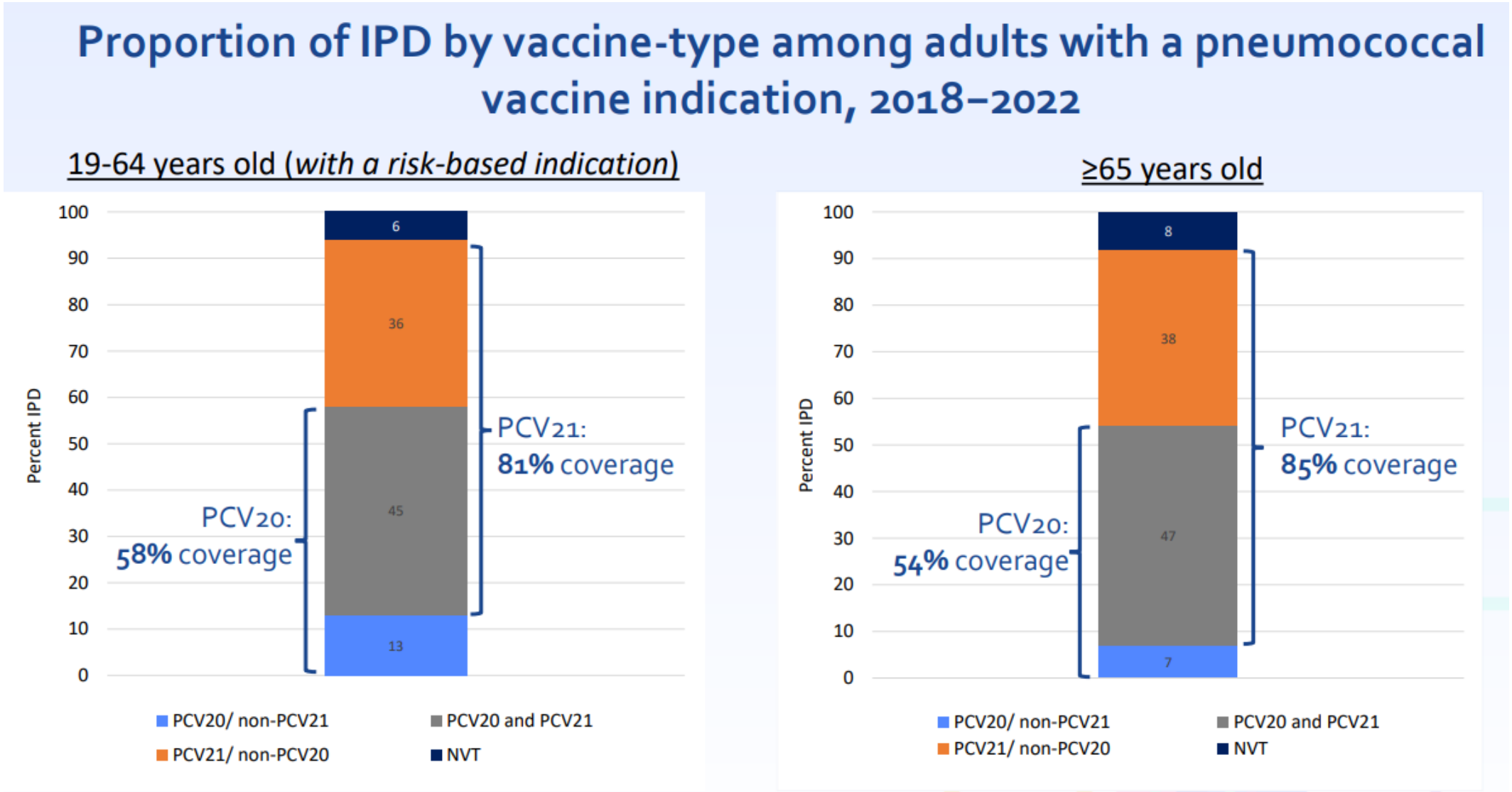
21-valent pneumococcal conjugate vaccine (CAPVAXIVE™, Merck):

- 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

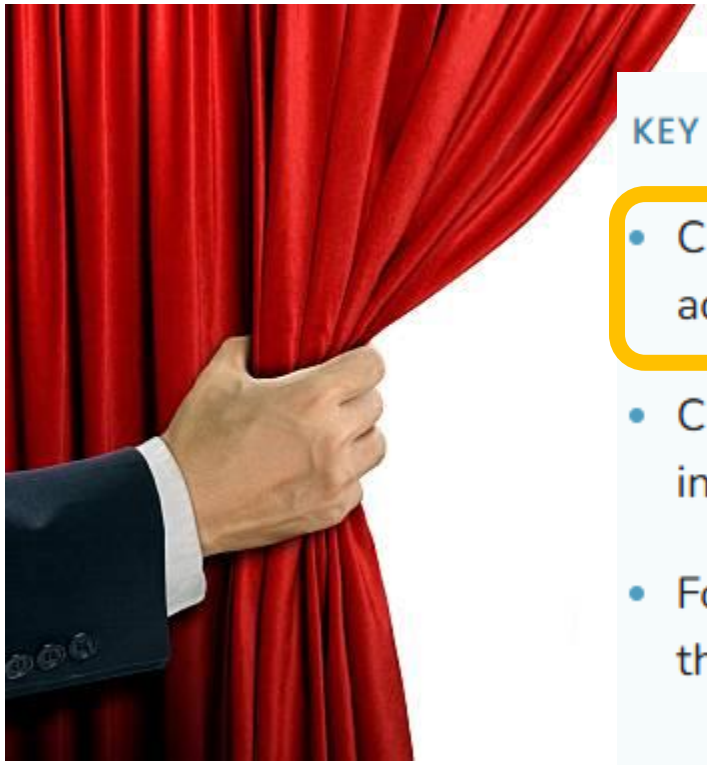
ACIP June 2024

June, 2024

- ACIP recommends PCV21 as an option for adults aged ≥19 years who currently have a recommendation to receive a dose of PCV.
- People who have previously been vaccinated with PCV-20 **do not** need a dose of PCV-21

October, 2024

ACIP October 2024



KEY POINTS

- CDC recommends pneumococcal vaccination for children younger than 5 years and adults 50 years or older.
- CDC also recommends pneumococcal vaccination for children and adults at increased risk for pneumococcal disease.
- Follow the recommended immunization schedule to ensure that your patients get the pneumococcal vaccines that they need.

Pneumococcal vaccine Case series

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

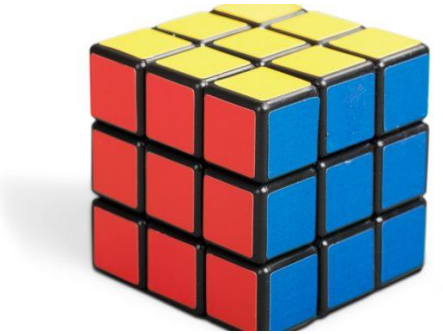
PCV-20 or 21 x1*

PCV-20 or 21 x1*

PCV-20 or 21 x1*

PCV-20 or 21 x1*

PCV-20 or 21 x1*



*OR PCV-15 + PPSV-23

But wait…there's more

New Adult Pneumococcal Vaccines in Advanced Stages of Development

	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	16F	7C
PCV15	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■																			
PCV20	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■														
PPSV23	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
PCV21		■			■		■				■			■	■	■	■	■	■			■	■	■	■	■	■	■	■	■	■	■		
Pn-MAPS24v	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
VAX-24	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■										
VAX-31	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■		■	■	■	■

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…

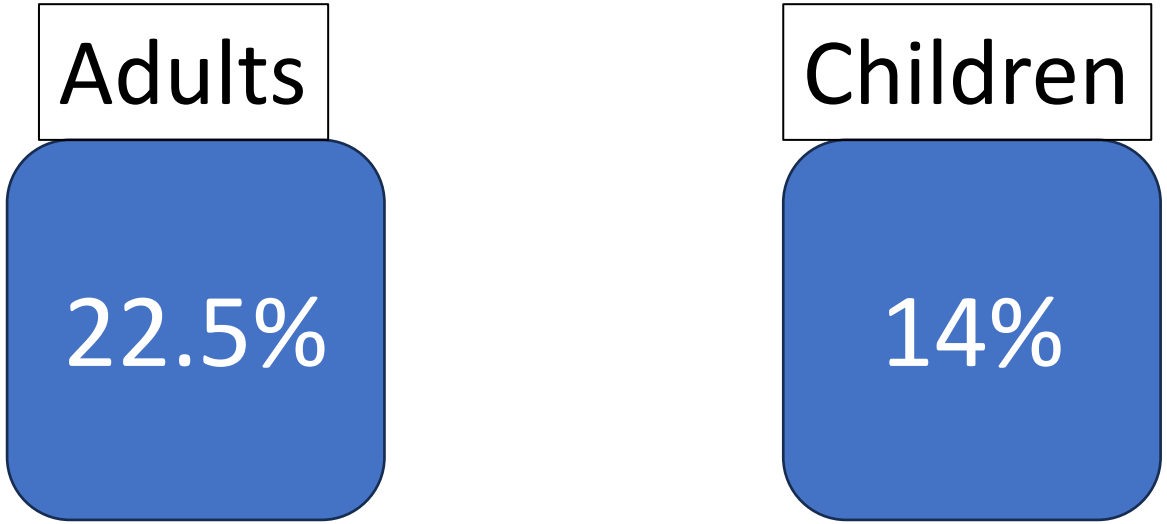
- Polysaccharide vaccine (PPSV-23) will be phased out very soon
- Rolling approval of conjugate vaccines with broader serotype coverage
- Will people previously vaccinated with PCV-20 need broader serotype boosters when available?

Case

A healthy 24-year-old man presents for yearly physical. He has received 3 doses of mRNA vaccine and has had COVID twice. Last infection was 1 month ago. Courses were mild. Do you recommend the updated COVID vaccine?

A. Yes, give it now
B. Yes, but wait until at least 3 months from last infection
C. No

CDC recommends yearly COVID boosters for everyone 6 months and older



Influenza and COVID-19 Vaccination Coverage Among Health Care Personnel — National Healthcare Safety Network, United States, 2023–24 Respiratory Virus Season

Weekly / October 31, 2024 / 73(43);966–972

Boosters for young healthy individuals: Considerations

- No clinical data on effectiveness – inferred from neutralizing antibody response
- Antibody titers wane after 60-90 days
- Risk of severe outcome is very low in young healthy individuals who have been previously vaccinated and/or infected (hybrid immunity)
- Vaccine is very safe; low, but non-zero risk of post-vaccine myocarditis especially in young men

United States is now an outlier

- UK, Sweden, Germany, Norway, Finland recommend only for those at highest risk
- WHO: “Although additional boosters are safe for this group, we do not routinely recommend them, given the comparatively low public health returns.”

Does Everyone Need a Yearly Covid Booster?

The most recent recommendation by the CDC has come under question.

PAUL OFFIT

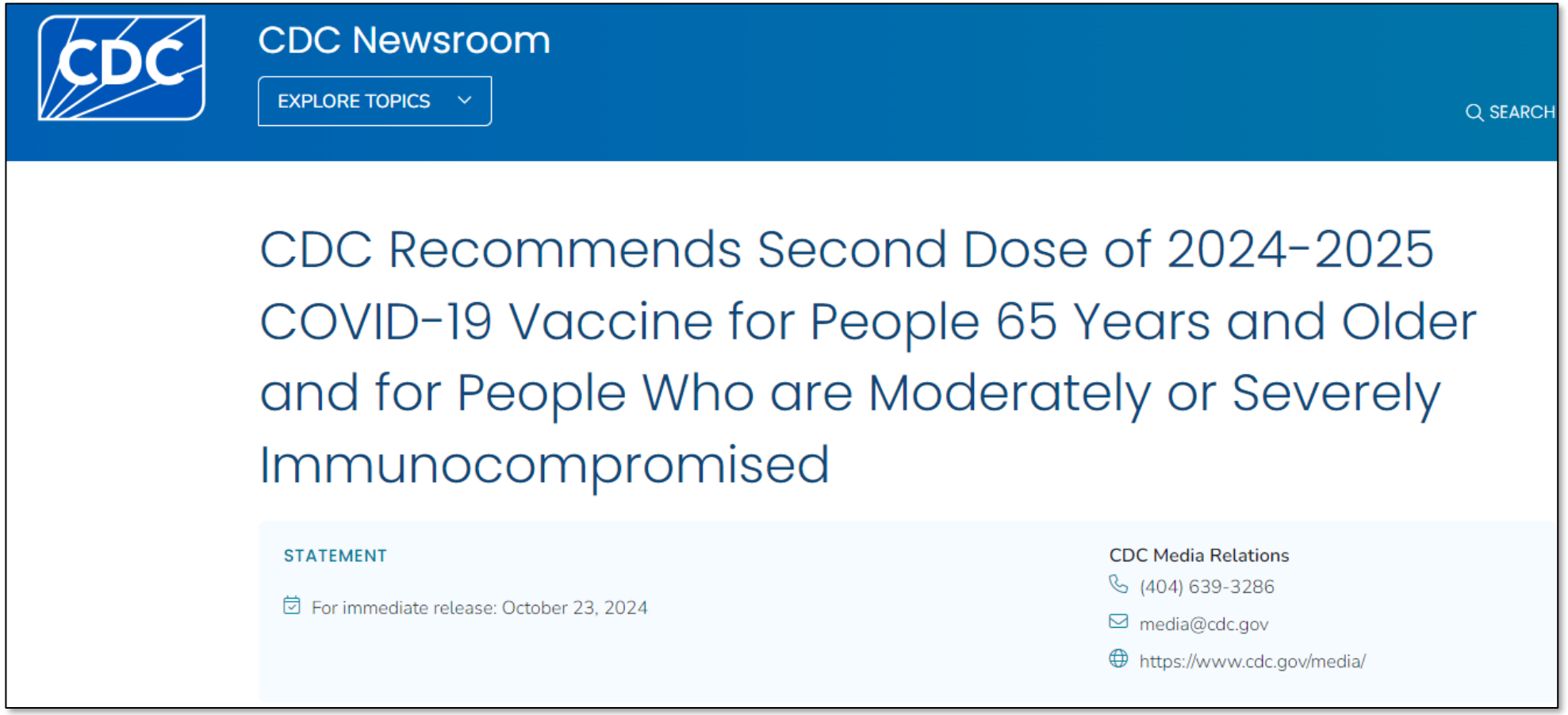
SEP 18, 2023

CDC recommends yearly COVID boosters for everyone 6 months and older

WHAT TO KNOW

- Everyone ages 6 months and older should get a 2024–2025 COVID-19 vaccine.
- The COVID-19 vaccine helps protect you from severe disease, hospitalization, and death.
- It is especially important to get your 2024–2025 COVID-19 vaccine if you are ages 65 and older, are at high risk for severe COVID-19, or have never received a COVID-19 vaccine.
- Vaccine protection decreases over time, so it is important to stay up to date with your COVID-19 vaccine.

October 23, 2024



CDC Newsroom

EXPLORE TOPICS

SEARCH

CDC Recommends Second Dose of 2024-2025 COVID-19 Vaccine for People 65 Years and Older and for People Who are Moderately or Severely Immunocompromised

STATEMENT

For immediate release: October 23, 2024

CDC Media Relations
(404) 639-3286
media@cdc.gov
https://www.cdc.gov/media/

Vaccine considerations in IC patients

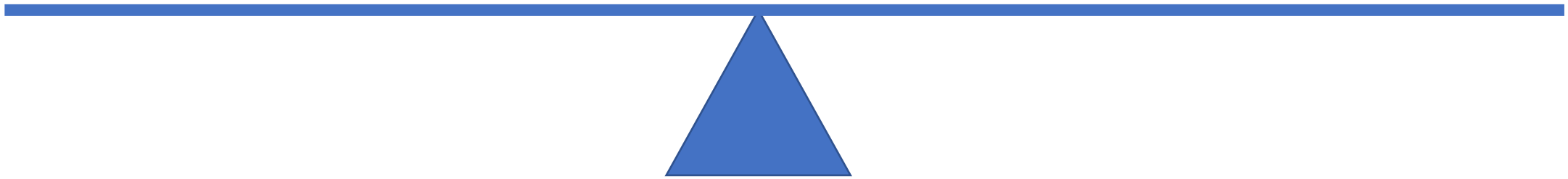
- Low efficacy during periods intense immunosuppression
- Vaccinate BEFORE the need for immunosuppression (when possible)
- Ideally 2 weeks before initiation or resumption of immunosuppression
- B-cell depleting therapies: aim for 4 weeks prior to the next scheduled dose
- Some data support lightening 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

Vaccines beyond 2025

- 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



Key Points

- RSV vaccine now recommended for age >75 and high risk individuals aged 60-74
- Pneumococcal vaccine recommended for anyone 50 or older
- PCV-21 is an acceptable option for pneumococcal vaccination
- Consider twice-yearly COVID vaccines for highest risk patients (age, immunocompromise)
- Shared decision making for COVID boosters in young, healthy adults

Selected References

- Rosenberg ES and Lutter Loh E. IDWeek, October 2022
- Papi A, Ison MG, Langley JM, et al. Respiratory Syncytial Virus Prefusion F Protein Vaccine in Older Adults. *N Engl J Med*. 2023;388(7):595-608.
- Walsh EE, Pérez Marc G et al. RENOIR Clinical Trial Group. Efficacy and Safety of a Bivalent RSV Prefusion F Vaccine in Older Adults. N Engl J Med. 2023 Apr 20;388(16):1465-1477. doi: 10.1056/NEJMoa2213836. Epub 2023 Apr 5. PMID: 37018468.
- Kampmann B, Madhi SA, Munjal I et al. MATISSE Study Group. Bivalent Prefusion F Vaccine in Pregnancy to Prevent RSV Illness in Infants. N Engl J Med. 2023 Apr 20;388(16):1451-1464. doi: 10.1056/NEJMoa2216480. Epub 2023 Apr 5. PMID: 37018474.
- Wilson E, Goswami J, Baqui AH et al. ConquerRSV Study Group. Efficacy and Safety of an mRNA-Based RSV PreF Vaccine in Older Adults. N Engl J Med. 2023 Dec 14;389(24):2233-2244. doi: 10.1056/NEJMoa2307079. PMID: 38091530.
- ACIP June 2024 presentations: https://www.cdc.gov/vaccines/acip/meetings/slides-2024-06-26-28.html
- Clinicaltrials.gov ID NCT05477524
- https://www.cdc.gov/vaccines/schedules/index.html
- https://www.immunize.org/ask-experts/overview/