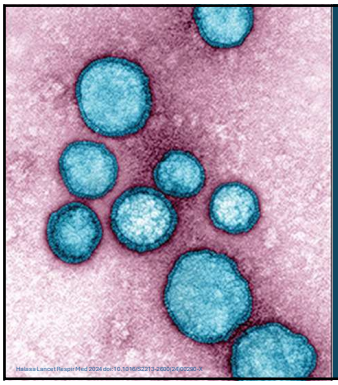


RSV Prevention in Practice: Vaccines, Monoclonals, and Evolving Guidelines

IDSO November 6, 2026

Kristina Bajema, MD, MSc

Disclosures

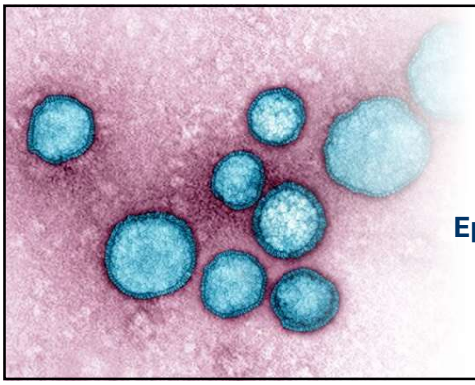
- No financial conflicts of interest
- The contents of this presentation do not necessarily represent the views of OHSU, the US Department of Veterans Affairs, or the US government

Objectives

1. Describe current recommendations for RSV vaccination in non-pregnant adults.
2. Identify strategies to prevent severe RSV-associated lower respiratory tract infection in infants.
3. Describe safety of RSV vaccines, including risk of Guillain-Barré syndrome.

Outline

- Epidemiology
- Vaccines
- Vaccine safety
- Long-acting monoclonals
- Evolving guidelines
- Future directions
- Review



Epidemiology

RSV burden in US, 2025–26 season

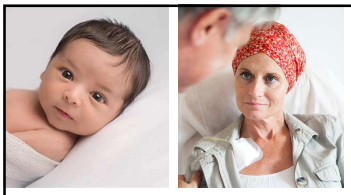
2.8–5.8 million	170,000–340,000	9,900–25,000
OUTPATIENT VISITS	HOSPITALIZATIONS	DEATHS

CDC 2026 https://www.cdc.gov/rsv/php/surveillance/burden-estimates.html

RSV versus influenza burden in US

2.8–5.8 million	**170,000–340,000**	**9,900–25,000**
OUTPATIENT VISITS	HOSPITALIZATIONS	DEATHS
15–25 million	**390,000–800,000**	**24,000–81,000**
OUTPATIENT VISITS	HOSPITALIZATIONS	DEATHS

CDC 2025 https://archive.cdc.gov/#/details?url=https%3A%2F%2Fwww.cdc.gov%2Fflu-burden%2Fphp%2Fphp%2Fdata-vis%2F2025-2026.html





Groups at increased risk for severe RSV disease

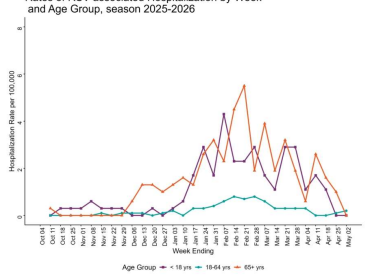
- Nam BMJ 2019 doi:10.1136/bmj.l6021
- Savic Influenza Other Respir Viruses 2022 doi:10.1111/irv.13031
- Hansen JAMA Netw Open 2022 doi:10.1001/jamanetworkopen.2022.0527
- Havers JAMA Netw Open 2024 doi:10.1001/jamanetworkopen.2024.44756

Public Health Division

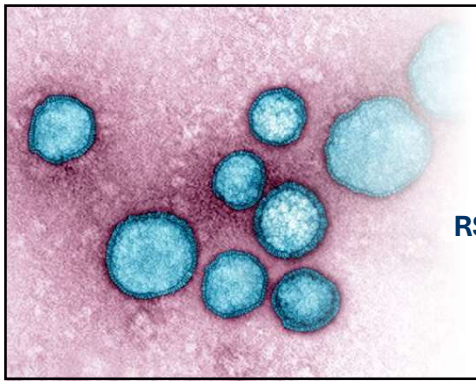
Acute and Communicable Disease Prevention

OREGON HEALTH AUTHORITY

Rates of RSV-associated Hospitalization by Week and Age Group, season 2025-2026



OHA 2026 https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/DISEASESURVEILLANCEDATA/Documents/RSV/RSV_Oregon-2025-26.pdf



RSV Vaccines

Three FDA-approved RSV vaccines are available in the US

Ages 60 years and older &
18–59 years at increased risk for RSV-associated lower respiratory tract disease (LRTD)

AREXVY, GSK	ABRYSVO, Pfizer	MRESVIA, Moderna
RSVPreF3	**RSVpreF***	**mRNA-1345**

*** Additional pregnancy indication at 32-36 weeks' gestation to prevent LRTD in infants 0-6 months**

FDA 2026 https://www.fda.gov/vaccines-blood-biologics/arexvy
FDA 2026 https://www.fda.gov/vaccines-blood-biologics/abrysvo
FDA 2026 https://www.fda.gov/vaccines-blood-biologics/vaccines/mresvia

ACIP recommendations

- Single lifetime dose for all adults 75 years and older & 50-74 years at increased risk for severe RSV disease
- Maternal RSVpreF at 32-26 weeks' gestation

Britton MMWR 2024 https://www.cdc.gov/mmwr/volumes/73/wr/mm7332e1.htm
CDC 2025 https://www.cdc.gov/acip/vaccine-recommendations/
Fleming-Dutra MWMR 2023 https://www.cdc.gov/mmwr/volumes/72/wr/mm7241e1.htm?s_cid=mm7241e1_w

Clinical trial data supporting licensure in older adults

- Moderate-to-high efficacy ~82-89% against RSV-associated LRTD during the first RSV season
- Caveats:
  - Low enrollment of participants 80 years and older
  - Exclusion of immunocompromised
  - Low prevalence of cardiopulmonary disease and other medical conditions compared with the general population

Papi N Engl J Med 2023 doi:10.1056/NEJMoa2209604
Walsh N Engl J Med 2023 doi:10.1056/NEJMoa2213836
Wilson N Engl J Med 2023 doi:10.1056/NEJMoa2307079

Clinical trial data supporting licensure in pregnant persons

- MATISSE studied healthy pregnant persons at 24-36 weeks' gestation
- ↓ risk severe LRTI
  - 82% within 90 days after birth
  - 70% within 180 days after birth

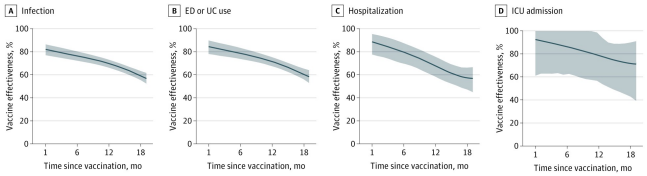
Kampmann N Engl J Med 2023 doi:10.1056/NEJMoa2216480
Simões Obstetrics & Gynecology 2025 doi:10.1097/AOG.0000000000005816

Real world evidence for RSV vaccines in older adults

- Strong protection against hospitalization and other medically attended RSV illness for all 3 products during first RSV season

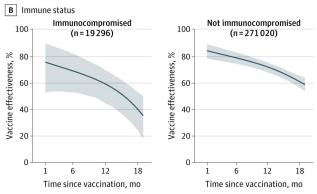
Lassen N Engl J Med 2026 doi:10.1056/NEJMoa2509810
Payne Lancet 2025 doi:10.1016/S0140-6736(24)01738-6
Bajema Lancet Infect Dis 2025 doi:10.1016/S1473-3099(24)00796-5
Bui JAMA Netw Open 2026 doi:10.1001/jamanetworkopen.2026.40981
Surie JAMA 2024 doi:10.1001/jama.2024.15775

Protection declines over time



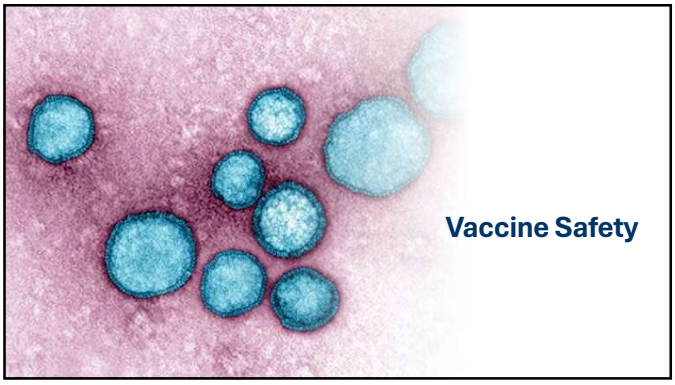
Bajema JAMA Intern Med 2026 doi:10.1001/jamainternmed.2025.6355

Decline in protection is notable among immunocompromised



Medically-attended RSV illness:
75% at 0-1 month
40% at 0-18 months

Bajema JAMA Intern Med 2026 doi:10.1001/jamainternmed.2025.6355



Vaccine Safety

Vaccine safety - Guillain-Barré syndrome (GBS)

- A small number of inflammatory neurologic events observed in clinical trials supporting licensure for RSVPreF3 and RSVpreF in older adults
- FDA issued a warning in 2025
  - "…evidence suggests increased risk of GBS…but…is insufficient to establish a causal relationship."
- FDA study of 3.8 million Medicare beneficiaries
  - No statistically significant increased risk ADEM, encephalomyelitis excluding ADEM, transverse myelitis

Melgar MMWR 2023 https://www.cdc.gov/mmwr/volumes/72/wr/mm7229a4.htm
FDA 2025 https://www.fda.gov/vaccines-blood-biologics/safety-availability-biologics/fda-requires-guillain-barre-syndrome-gbs-warning-prescribing-information-rsv-vaccines-abrysvo-and
Lloyd Vaccine 2026 doi:10.1016/j.vaccine.2026.128458

Vaccine safety - Guillain-Barré syndrome (GBS)

- Self-controlled case series studies in Europe and US suggested an increased risk in the first 42 days after RSVpreF
- Three additional trials reporting on GBS following vaccination with RSVpreF or RSVPreF3 did not identify GBS
- No reports of GBS following vaccination during pregnancy
- ↑ risk of GBS after medically attended RSV disease
  - aIRR 2.11 (95% CI, 1.01-4.37)

Cullen Vaccines 2025 doi:10.3390/vaccines13111088
Stowe Nat Comm 2025 doi:https://doi.org/10.1038/s41467-025-66280-4
Fry JAMA Netw Open 2025 doi:10.1001/jamanetworkopen.2025.8327
Lassen N Engl J Med 2026 doi:10.1056/NEJMoa2509810
Myer Vaccines 2025 doi:10.3390/vaccines13121218
Roussy Clin Infect Dis 2026 doi:10.1093/cid/ciag208
Liang Clin Infect Dis 2026 doi:10.1093/cid/ciaf621

Vaccine safety – Atrial fibrillation

- Numerical imbalances observed in clinical trials supporting licensure for RSVPreF3 and RSVpreF
- FDA Medicare and other studies have not identified increased atrial fibrillation risk
- FDA: "Currently available information on atrial fibrillation is insufficient to determine a causal relationship to the vaccine"

Melgar MMWR 2023 https://www.cdc.gov/mmwr/volumes/72/wr/mm7229a4.htm
Lloyd Vaccine 2026 doi:10.1016/j.vaccine.2026.128458
Birabaharan Clin Infect Dis 2026 doi:https://doi.org/10.1093/cid/ciae649
FDA 2026 https://www.fda.gov/vaccines-blood-biologics/arexvy
FDA 2026 https://www.fda.gov/vaccines-blood-biologics/abrysvo

Vaccine safety in pregnancy – Pre-term births

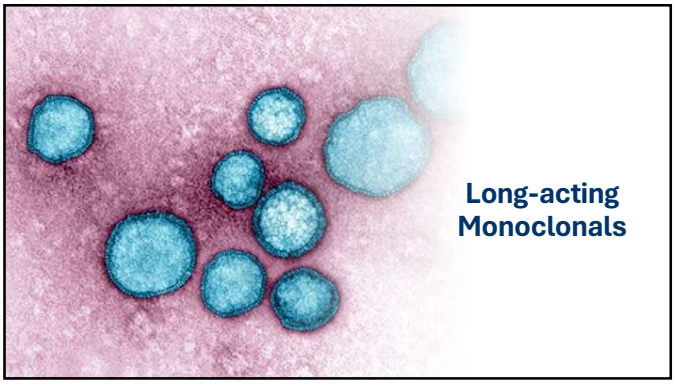
- Numerically more pre-term births (<37 weeks gestation) among RSVpreF recipients
- FDA warning – potential risk for preterm birth
- Approved vaccine for 32-36 weeks to avoid risk for preterm birth <32 weeks
- Post-authorization safety surveillance (Vaccine Safety Datalink) reassuring

Melgar MMWR 2023 https://www.cdc.gov/mmwr/volumes/72/wr/mm7229a4.htm
FDA 2023 https://www.fda.gov/news-events/press-announcements/fda-approves-first-vaccine-pregnant-individuals-prevent-rsv-infants
ACOG 2026 https://www.acog.org/clinical/guidance/practice-advisory/2023/09/maternal-respiratory-syncytial-virus-vaccination/
Moro 2024 https://www.cdc.gov/acip/downloads/slides-2024-06-26-28/03-RSV-Mat-Peds-Moro-508.pdf

Vaccine safety in pregnancy – Pre-eclampsia

- Overall data are conflicting
- Numerical imbalance in the original clinical trial (1.8% vs 1.4%)
- Conflicting results in observational studies

Kampmann N Engl J Med 2023 doi:10.1056/NEJMoa2216480
Son JAMA Netw Open 2024 10.1001/jamanetworkopen.2024.19268
DeSilva 2025 https://www.cdc.gov/acip/downloads/slides-2025-06-25-26/04a-DeSilva-Mat-Peds-RSV-508.pdf



Long-acting Monoclonals

Two FDA-approved long-acting monoclonals for infants

BEYFORTUS, Sanofi & AstraZeneca

Nirsevimab

FIRST RSV SEASON: Infants <8 months

SECOND RSV SEASON: High-risk 8-19 months*

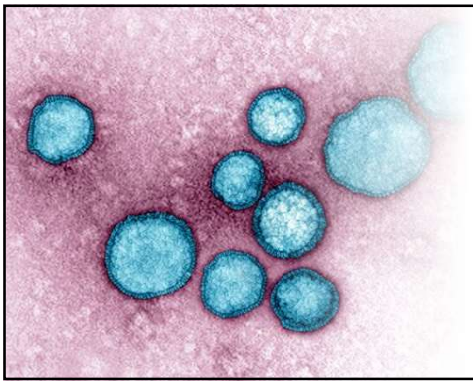
*e.g., chronic lung disease of prematurity, severe immunocompromise, cystic fibrosis with severe lung disease or <10th percentile weight-for-length, AI/AN

ENFLONSIA, Merck

Clesrovimab

FIRST RSV SEASON: Infants <8 months

Jones MMWR 2023 https://www.cdc.gov/mmwr/volumes/72/wr/pdfs/mm7234a4-H.pdf
Moulia MMWR 2025 https://www.cdc.gov/mmwr/volumes/74/wr/mm7432a3.htm
AAP 2026 https://publications.aap.org/pediatrics/article/158/6/e2026179049/208787/Recommendations-for-the-Prevention-of-Respiratory



Evolving Guidelines

Vaccine Integrity Project

- Established in 2025
- University of Minnesota Center for Infectious Disease Research and Policy (CIDRAP)
- Conduct evidence reviews and communicate information about vaccines
  - RSV Immunization Effectiveness and Safety for the 2026-2027 Respiratory Season
  - Moving toward quarterly evidence reviews

Vaccine Integrity Project 2026 https://vaxintegrity.cidrap.umn.edu/our-work
Senerth JAMA 2026 doi: 10.1001/jama.2026.17871

Non-pregnant adults

AAFP

- Single dose of any age-appropriate FDA-licensed RSV vaccines for:
  - Adults ≥75 years and older
  - Adults 50-74 years at increased risk for severe RSV*
- Optimal timing: late summer to early fall

ACP

- Similar, with focus on 60-74 years and protein subunit vaccines

*Chronic heart or lung disease, weakened immune systems, certain other underlying conditions, adults residing in nursing homes or long-term care facilities

AAFP 2026 https://www.aafp.org/assets/image/upload/v1788277985/pdf_2026_through_2027_influenza_rsv_sars_covid_2_guidance.pdf
Qaseem Ann Intern Med doi:https://doi.org/10.7326/ANNALS-25-05485

Pregnant persons

ACOG

- Single dose of RSVpreF at 32-36 weeks and no planned delivery within 2 weeks
- Did not receive RSV during previous pregnancy
- Not planning to have infant receive nirsevimab or clesrovimab
- Optimal timing: September through March

ACOG 2026 https://www.acog.org/clinical/guidance/practice-advisory/2023/09/maternal-respiratory-syncytial-virus-vaccination/

Immunocompromised

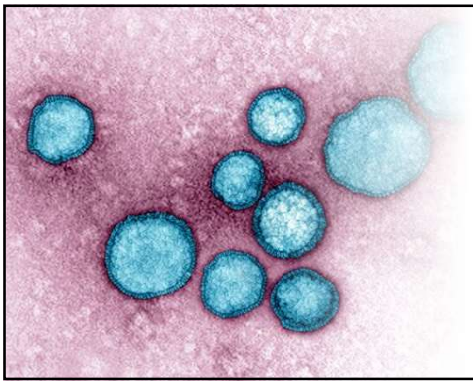
IDSA

- All immunocompromised individuals aged ≥18 years should receive the RSV vaccine
- If <18 years (adolescents), administration should be guided individually
- Additional doses to be considered on a case-by-case basis

IDSA 2026 https://www.idsociety.org/practice-guideline/Seasonal-RTI-Vaccinations-in-Immunocompromised-Patients/

Consolidated recommendations

AMA 2026 https://www.ama-assn.org/system/files/respiratory-virus-immunization-recommendations.pdf



Future Directions

Revaccination – clinical data

- Revaccination with RSVPreF3 12 months after first dose
  - No additional efficacy benefit against LRTD over 2 seasons
  - Possible benefit over 3 seasons?
    - Trial was not designed to compare 1 vs 2-dose regimens over 3 seasons
- Revaccination study with RSVpreF at 1-, 2-, 3-year intervals in immunocompromised recently launched

Ison CID 2024 doi:10.1093/cid/ciae010
Ison Lancet Respir Med 2025 doi:10.1016/S2213-2600(25)00048-7
https://clinicaltrials.gov/study/NCT07768345?cond=rsv&term=revaccination&viewType=Card&rank=3

Revaccination – immunogenicity data

- RSVPreF3
  - Robust antibody responses following revaccination at 24 and 36 months, but peak responses were less than peak following initial vaccine dose
  - Strong cellular immune response with consistent increases in $CD4^+$ T-cell levels
- mRNA-1345
  - Revaccination at 12 months and 24 months: neutralizing antibody titers similar to response after first dose

Gerber 2025 https://www.cdc.gov/acip/downloads/slides-2025-04-15-16/03-Gerber-Adult-RSV-508.pdf
Goswami Clin Infect Dis 2025 doi:10.1093/cid/ciaf515
Desai J Infect Dis 2026 doi:10.1093/infdis/jiag359

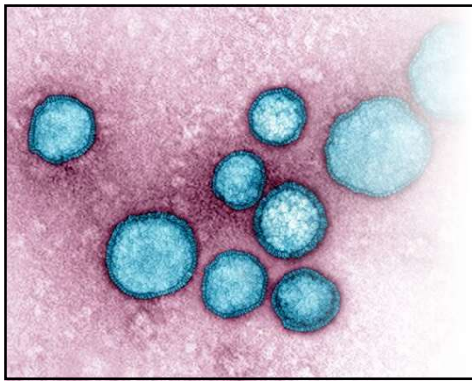
Revaccination – summary

- Best revaccination strategy remains to be determined
- May vary based on product, homologous vs heterologous boosting, and host status

Antivirals – zelicapavir (EDP-938)

- Oral N-protein inhibitor given once-daily x5 days
- Phase 2b trial, 2022-25
  - Adults with 1+ risk factor(s): ≥65 years, heart failure, COPD, asthma
  - Enrolled within 72 hours of symptom onset
  - Randomized 2:1 (121 zelicapavir, 65 placebo)
  - Daily symptom questionnaire over 33 days
  - Primary endpoint not met
    - Time to resolution of RSV LRTD symptoms to mild/absent (each symptom ≤1 at 2 consecutive timepoints)
  - Other pre-specified endpoints suggested benefit
    - Shorter median time to complete and sustained symptom resolution
  - Undetectable viral load at day 5: 24% zelicapavir vs 10% placebo (p 0.02)

Harris IDWeek 2026 poster
https://clinicaltrials.gov/study/NCT05687067?tab=study



Review

1. What is the current recommendation for RSV vaccination in pregnancy?
2. A single lifetime RSV vaccine dose is recommended for all adults 75 years and older as well as adults 50-74 years who are at increased risk for severe disease. In what adult, non-pregnant patient group might vaccination be considered before 50?
3. FDA has issued a warning for increased risk of ___ following vaccination with RSVPreF3 and RSVpreF, although a causal relationship has not been established.