IDSA 2025 Guidelines on the Use of Vaccines for the Prevention of Seasonal COVID-19, Influenza, and RSV Infections in Immunocompromised Patients

Published October 17, 2025

Last Updated November 04, 2025

Last Updated:
November 04, 2025

Published online:
Please refer to the following links for additional guidance on the use of COVID-19, Influenza, and RSV vaccines:

Children & Adolescents: **American Academy of Pediatrics**
Healthy Adults & Elderly People: **American Academy of Family Physicians**
Pregnant People: **American College of Obstetricians and Gynecologists**

This Has Been Corrected / Updated.**View Update History**

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Keywords:
Immunocompromised, Vaccination, Adults and Children, Household Contacts, Coadministration (COVID-19, Influenza, RSV)

Background

To support evidence-based clinical & shared decision-making during the 2025-2026 respiratory tract infection season, IDSA developed rapid guidelines for the use of U.S-licensed vaccine against COVID-19, Influenza, and RSV in adult and pediatric patients who are immunocompromised.

Immunocompromised patients are defined as individuals who have impaired immune systems either due to their underlying disease (e.g. HIV, malignancy) or due to the medications they must take (e.g. solid organ transplant). Patients with chronic organ dysfunction (e.g. end stage renal disease: requiring dialysis, cirrhosis, or end-stage heart disease) are not considered in this guideline.

These recommendations address patients who have a hematologic malignancy, primary immunodeficiency, autoimmune disease treated with immunosuppressants or biologics, or HIV with severe immunosuppression (CD4 <15% or <200/mm^3), as well as patients who are recipients of solid organ transplants (SOT), hematopoietic cell transplantation (HCT), chimeric antigen receptor T-cell therapy (CAR-T), or solid-tumor chemotherapy.

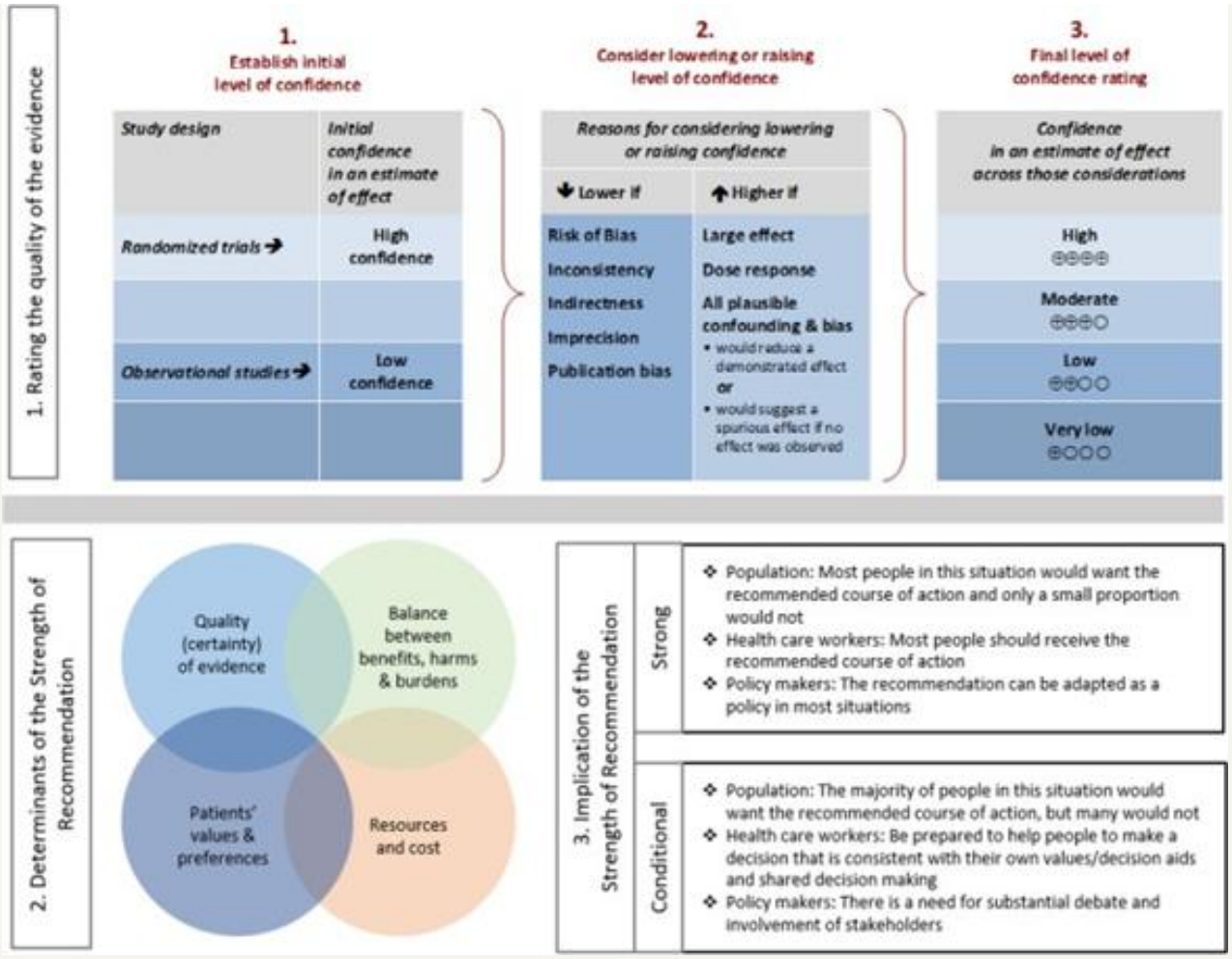
Methods

The IDSA panel included clinicians with expertise in infectious diseases, hematology/oncology, solid organ transplantation, immunology, virology/vaccinology, immunosuppressive medications and monoclonal antibodies, pediatrics, and HIV. The panel established one clinical question for the use of each vaccine ("should [virus] vaccine vs no vaccine be used in immunocompromised patients?") and identified patient-importance outcomes for both vaccine effectiveness and adverse events (e.g., hospitalization, mortality, progression to severe disease; and serious adverse events, or exacerbation of immunocompromising or autoimmune conditions, respectively).

To establish the basis for recommendations, the panel reviewed the best available evidence published in the 18–24 months since the evidence base for the last CDC recommendations for each vaccine (search start dates were June 2024 for COVID-19; August 2024 for RSV; and August 2023 for influenza and search end date was July 31, 2025). Using the results of a systematic literature review conducted by the Vaccine Integrity Project, and supplementary searches for additional patient-important outcomes, the IDSA panel used the GRADE (Grading of Recommendations Assessment, Development and Evaluation) approach to assess the certainty of evidence and determine the strength of each recommendation (**Figure 1**).

Pooled vaccine effectiveness rates and corresponding relative effect measures (RR, HR, OR) were summarized in the GRADE evidence profile. To better illustrate population effects, absolute risk differences were calculated by using baseline risk estimates from cohort studies as well as additional estimates from published cumulative incidence rates [1] adjusted for immunocompromised status. Risk of bias of included studies were evaluated using the ROBINS-I tool. The overall certainty of evidence was rated for each outcome and across studies using established GRADE criteria.

Figure 1. Approach and implications to rating the quality of evidence and strength of recommendations using GRADE methodology (unrestricted use of figure granted by the U.S. GRADE Network)



Recommendations

COVID-19 Recommendation

In adults and children with compromised immunity*, the IDSA guideline panel recommends administering age-appropriate 2025-2026 COVID-19 vaccinations (*strong recommendation, moderate certainty of evidence*).

*see **Table 1** for risk group and timing.

Remarks

- An FDA-approved 2025-2026 COVID-19 vaccine dose should be given as soon as possible.
- A second dose of COVID-19 vaccination is likely to extend protection.
- For never vaccinated and incompletely vaccinated patients refer to published guidelines [2].
- Household members and close contacts of immunocompromised patients should be up to date with COVID-19 vaccination.
- It is appropriate for patients to receive COVID-19, influenza, and RSV vaccines together.

Influenza Recomemndation

In adults and children with compromised immunity*, the IDSA guideline panel recommends administering age-appropriate 2025-2026 Influenza vaccinations (*strong recommendation, moderate certainty of evidence*).

*see **Table 3** for risk group and timing.

Remarks

- Vaccination must be repeated on an annual basis to provide optimal protection.
- High dose or adjuvanted influenza vaccines provide more robust immune response, which may be of particular importance in immunocompromised patients.
- Household members and close contacts of immunocompromised patients should be up to date with Influenza vaccination.
- Live-attenuated influenza vaccines are contraindicated for immunocompromised hosts or their household contacts.
- It is appropriate for patients to receive COVID-19, influenza, and RSV vaccines together.

Respiratory Syncytial Virus (RSV) Recommendation

In adults and adolescents with compromised immunity*, the IDSA guideline panel recommends administering age-appropriate RSV vaccinations (*strong recommendation, moderate certainty of evidence*).

*see **Table 5** for risk group and timing.

Remarks

- FDA approved RSV vaccines for adults include RSVPreF3, RSVPreF, and mRNA-1345.
- For immunocompromised patients <18 years, administration should be guided by shared decision making.
- Solid organ transplant candidates, especially lung transplant, should ideally be vaccinated pre-transplant.
- Household members and close contacts of immunocompromised patients should be up to date with RSV vaccination, if eligible.
- It is appropriate for patients to receive COVID-19, influenza, and RSV vaccines together.

Recommendation**CURRENT**

COVID-19

Last Updated:
October 17, 2025

Literature Review Conducted:
October 17, 2025

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- **COVID-19 Supplemental Material**

Keywords:
Immunocompromised, COVID-19 Vaccination, Adult and Children

Recommendation

In adults and children with compromised immunity*, the IDSA guideline panel recommends administering age-appropriate 2025-2026 COVID-19 vaccinations (*strong recommendation, moderate certainty of evidence*).

*see **Table 1** for risk group and timing.

Remarks

- An FDA-approved 2025-2026 COVID-19 vaccine dose should be given as soon as possible.
- A second dose of COVID-19 vaccination is likely to extend protection.
- For never vaccinated and incompletely vaccinated patients refer to published guidelines [2].
- Household members and close contacts of immunocompromised patients should be up to date with COVID-19 vaccination.
- It is appropriate for patients to receive COVID-19, influenza, and RSV vaccines together.

Table 1. COVID-19 Vaccination Guidance by Immunocompromised Population[2-8]

Group	Suggested timing of 2025-2026 COVID-19 vaccine*, **
Solid organ transplant	• At least 2 weeks pre-SOT; or ≥3 months post-SOT
Hematologic malignancy	• Optimal timing includes ≥2 weeks before starting treatment and ≥ 3 months after last infusion ○ For B-cell depletion, consider ≥3-6 months after last infusion • If optimal timing not feasible, administer during treatment (blunted immune response likely)
HCT/CAR-T	• Optimal timing includes ≥3 months after transplant or CAR-T treatment ○ For B-cell depletion, consider ≥3-6 months after last infusion • If optimal timing not feasible, administer during treatment (blunted immune response likely)
Solid tumor chemotherapy	• At least 2 weeks before starting therapy; during/after is acceptable
Primary Immuno-deficiency	• Align with IVIG/SCIG or clinic access
Autoimmune immunosuppression	• Optimal timing includes ≥2 weeks before starting treatment and ≥ 3 months after last infusion ○ For B-cell depletion, consider ≥3-6 months after last infusion • If optimal timing not feasible, administer during treatment (blunted immune response likely)
HIV	• Align with preventive routine care

*Defer during acute transplant rejection treatment or severe/acute illness

**Use shared-decision making for early windows based on levels of community virus circulation

Results

The search identified two cohort studies [9, 10] and five test-negative case control studies [11-15] that reported on vaccine effectiveness outcomes. The search identified a self-controlled case series [16] that reported serious adverse events and 3 observational studies [17-19] that reported exacerbations of immunocompromising or autoimmune conditions.

Table 2. GRADE Evidence Profile: Should COVID-19 vaccination vs. no vaccination be used in immunocompromised patients (adults and children)?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	COVID19 vaccination	no vaccination	Relative (95% CI)	Absolute (95% CI)		
COVID-19 associated hospitalization												
1 [9]	non-randomised studies (cohort)	serious [a,b]	not serious	not serious	not serious	none	474/236490 (0.2%)	711/236490 (0.3%) 1.0%[c]	**VE 46%** (39.0-52.0) **HR 0.54** (0.48 to 0.61	**138 fewer per 100,000** (from 156 fewer to 117 fewer) **459 fewer per 100,000** (from 519 fewer to 389 fewer)	⊕⊕⊕◯ Moderate [a,b]	CRITICAL
COVID-19 associated hospitalization												
4 [11-13, 15]	non-randomised studies (test-negative case control)	serious [a,b]	not serious	not serious	not serious	none	3,569 cases 29,909 controls -	1.0%[c]	**VE 37%** (29-44) **OR 0.63** (0.56 to 0.71)	- **368 fewer per 100,000** (from 438 fewer to 288 fewer)	⊕⊕⊕◯ Moderate [a,b]	CRITICAL
Critical illness												
1 [14]	non-randomised	serious [a]	not serious	not serious	not serious	none	627 cases 30,977 controls		**VE 40%** (26-51)	-		CRITICAL
	studies (test-negative case control)						-	0.1%	**OR 0.60** (0.49 to 0.74)	**40 fewer per 100,000** (from 51 fewer to 26 fewer)	⊕⊕⊕◯ Moderate [a]	
COVID-19 related mortality												
1 [10]	non-randomised studies (cohort)	serious [a]	not serious	not serious	serious[d]	none	27/6,575 (0.4%)	339/27,501 (1.2%)	**VE 61%** (36-77) **HR 0.39** (0.23 to 0.64)	**750 fewer per 100,000** (from 948 fewer to 442 fewer)	⊕⊕◯◯ Low [a,d]	CRITICAL
Prevention of long COVID-19												
0							No studies were identified for the selected search period evaluating vaccine effects on post COVID conditions / long COVID in the immunocompromised population.			-		
Medically-attended visits (hospitals admissions, ED visits, UC visits, office visits, telemedicine visits)												
1 [9]	non-randomised studies (cohort)	serious [a,b]	not serious	not serious	not serious	none	4583/2364990 (1.9%)	4685/2364990 (2.0%)	**VE: 21%** (18-24) **HR 0.79** (0.76 to 0.82)	**413 fewer per 100,000** (from 472 fewer to 354 fewer)	⊕⊕⊕◯ Moderate [a,b]	CRITICAL
Medically-attended visits (ED/UC visits)												
1 [11]	non-randomised studies (test-negative case control)	serious [a]	not serious	not serious	not serious	none	3236 cases 18,526 controls -	2.0%	**VE: 34%** (22-45) **OR 0.66** (0.55 to 0.78)	- **671 fewer per 100,000** (from 890 fewer to 433 fewer)	⊕⊕⊕◯ Moderate [a]	CRITICAL
Medically-attended visits (outpatient visits)												
1 [11]	non-randomised studies (test-negative case control)	serious [a]	not serious	not serious	not serious	none	977 cases 7,148 controls -	2.0%	**VE: 40%** (19-55) **OR 0.60** (0.45 to 0.81)	- **790 fewer per 100,000** (from 1,090 fewer to 374 fewer)	⊕⊕⊕◯ Moderate [a]	CRITICAL
Serious adverse events												
1 [16]	non-randomised studies (case series)	very serious [e]	not serious	not serious	not serious	none	In an analysis of 583,541 people identified as immunocompromised in the United Kingdom, 52 adverse events were analyzed. No significant increase was associated with the first two COVID vaccine injections. After the third dose, an increased risk in a small number of conditions was observed; however, due to a large number of evaluated conditions, multiple testing, and low event rates, a spurious association cannot be ruled out (Bonferroni-corrected p value was not significant at the 1% level (corrected p=0.22 [16].					⊕⊕◯◯ Low[e]	CRITICAL
Exacerbations of immunocompromising or autoimmune conditions												
3 [17-19]	non-randomised studies	very serious[f]	not serious	serious[g]	serious[h]	none	In studies of 736 people identified as immunocompromised, evaluated conditions included multiple sclerosis, advanced cancer, and inflammatory bowel disease. Overall, exacerbations of immunocompromising or autoimmune conditions were not increased due to vaccination; however, one study with MRI imaging results in patients with multiple sclerosis, showed an increase in brain lesions; though no description was provided how this affected the patients clinically [19].					⊕◯◯◯ Very low[f,g,h]	IMPORTANT

CI: confidence interval; **HR:** hazard ratio; **OR:** odds ratio

Explanations

a. Applying ROBINS-I tool, residual, unknown confounders could not be ruled out
b. Some identified confounders were unlikely to have materially inflated the vaccine effectiveness; rather point in the opposite direction to potentially strengthen our inference of vaccine effectiveness. Not rated down further.
c. To further illustrate population impact by providing absolute risk differences, an additional baseline risk for hospitalization of 1% was set; estimated using COVID-net (Taylor CA, Patel K, Pham H, et al. COVID-19-Associated Hospitalizations Among U.S. Adults Aged ≥18 Years - COVID-NET, 12 States, October 2023-April 2024. MMWR Morb Mortal Wkly Rep 2024; 73(39): 869-75) cumulative incidence rate (88% of hospitalized patients were not vaccinated), multiplied by RR of 2.75 to account for immunocompromised conditions (Chapman A, Berenbaum F, Curigliano G, Pliakas T, Sheikh A, Abduljawad S. Risk of Severe Outcomes From COVID-19 in Immunocompromised People During the Omicron Era: A Systematic Review and Meta-Analysis. Clin Ther 2025; 47(9): 770-87).
d. Due to low number of events, fragility in the estimate may be present
e. Applying ROBINS-I tool, bias was present for confounding and measurement of outcomes
f. Applying ROBINS-I tool, bias was present in several domains including confounding, selection of participants, and measurement of outcomes
g. Increase in imaging detected brain lesions of uncertain clinical relevance
h. Due to low number of events

Vaccine Effectiveness

COVID-19 vaccination in the immunocompromised population is associated with a reduction in COVID-19 associated hospitalization. Vaccine effectiveness estimates ranged from 33% to 56% in studies and included one cohort study [9] (VE 46%, 95% CI 39-52%) and four test-negative case-control studies [11-13, 15] (VE 37%, 95% CI 29-44; *moderate certainty evidence*). Vaccination is associated with reductions in critical illness [14] (VE 40%, 95% CI 26-51; *moderate certainty evidence*) and COVID-19-related mortality [10] (VE 61%, 95% CI 36-77; *low certainty evidence*) as well as COVID-19 associated emergency department/urgent care visits [11] (VE 34%, 95% CI 22-45) and COVID-19 associated outpatient vists [11] (VE 40%, 95% CI 19-55; *moderate certainty evidence*). For most studies, follow-up time or time since last vaccine dose was relatively short, with a median of less than two months. Given that vaccine protection decreases over time, these estimates are likely to represent higher-end values.

Adverse Events

An increased risk of a small number of adverse events was observed in a self-controlled case series [16] conducted from 2020-2022 following a third vaccine dose of mRNA-based vaccine; however, due to a large number of evaluated conditions (52), multiple testing, and low event rates, a spurious association cannot be ruled out (Bonferroni-corrected p value was not significant at the 1% level (corrected p=0.22). Several adverse outcomes of interest, such as thrombotic events (e.g., myocardial infarction and stroke) were less frequent in the vaccinated population. Although cases of myocarditis were observed in the vaccinated cohort, the observed risk was lower in the vaccinated group compared to the unvaccinated group likely due to increased risk of myocarditis during COVID infections. However, this estimate was imprecise due to the rarity of this outcome (<1:48,000) after 1st and 2nd vaccine dose). In summary, little

or no serious adverse events were associated with currently available COVID-19 vaccines (*low certainty evidence*).

Overall, exacerbations of immunocompromising or autoimmune conditions do not increase due to vaccination; however, an increase in lesions on imaging in multiple sclerosis patients was reported in one study [19] (*very low certainty evidence*) although the clinical implication remains uncertain.

Rationale for Recommendation

The panel agreed that the overall certainty of evidence is moderate due to evidence on COVID-19 vaccine effectiveness in immunocompromised patients driven by the prevention of hospitalization. The moderate size of beneficial effects combined with little or no serious adverse effects justifies a strong recommendation for the administration of the 2025-2026 COVID-19 vaccine.

Implementation Considerations

Immunocompromised patients remain at increased risk for severe COVID-19 and may have attenuated vaccine responses, necessitating tailored vaccination strategies and ongoing risk mitigation. Implementation of COVID-19 vaccine recommendations in this population should address the following core considerations:

General Principles:

- All immunocompromised individuals aged ≥6 months should receive at least one dose of the current season's COVID-19 vaccine, with additional doses based on prior vaccination history and clinical judgment.
- Majority of evidence came from mRNA vaccines.
  Shared clinical decision-making is essential, allowing flexibility in timing and dosing to accommodate immunosuppressive therapy schedules, travel, and individual risk factors.
- Household members and close contacts should be up to date with COVID-19 vaccination to reduce transmission risk.

Subgroup-Specific Considerations:

- Solid Organ Transplant (SOT): Vaccination is optimally timed ≥2 weeks pre-transplant or ≥3 months post-transplant, avoiding periods of pulse immunosuppression and active rejection. Consider earlier administration during high community transmission or patient risk factors.
- Hematopoietic Cell Transplant (HCT)/CAR-T: Vaccination is recommended ≥3 months post-HCT/CAR-T, or ≥3-6 months after B-cell depleting therapy, with earlier vaccination considered during high community transmission.
- Hematologic Malignancy: Align vaccination with treatment cycles, ideally ≥2 weeks before new immunosuppression; defer during febrile neutropenia or severe illness. Consider during high community transmission.

- Solid Tumor Chemotherapy: Prefer vaccination ≥2 weeks before therapy, but vaccination during or after therapy is acceptable if needed; defer during severe illness. Consider during high community transmission.
- Primary Immunodeficiency: Vaccinate when clinically stable, aligning with IVIG/SCIG schedules or clinic access; defer during acute illness. Consider during high community transmission.
- Autoimmune Immunosuppression: Vaccinate ≥2 weeks prior to biologics or ≥3 months after therapy; ≥3-6 months after B-cell depletion; defer during severe flare or infection. Consider during high community transmission.
- HIV: Vaccinate regardless of CD4 count or viral load, ideally when stable and aligned with preventive routine care; defer during acute illness.
- Consider during high community transmission.

Additional Implementation Issues:

- Vaccine effectiveness is lower than in the immunocompetent population supporting the need for ongoing risk assessment based on levels of community transmission.
- Rapid access to antivirals targeting SARS-CoV2 and nonpharmaceutical interventions remain important adjuncts, especially for those with poor vaccine responses or contraindications.
- Patients may self-attest to immunocompromised status for vaccine eligibility.
- Staying up to date with COVID-19 vaccination is critical for immunocompromised populations, with individualized schedules, and close coordination with clinical care. Ongoing communication, equitable access, and integration of preventive strategies are essential for optimal protection.

Research Priorities

The evidence highlights persistent gaps in immunogenicity, clinical effectiveness, and optimal vaccine strategies for diverse immunocompromised subgroups, as well as the need for tailored approaches and robust outcome data.

Research priorities for COVID-19 vaccination in immunocompromised patients should address critical gaps in immunogenicity, clinical effectiveness, and implementation strategies across heterogeneous populations. Immunocompromised individuals—including those with solid organ transplants, hematologic malignancies, autoimmune diseases, and HIV—exhibit variable and often attenuated immune responses to COVID-19 vaccines, with organ transplant recipients and those receiving B-cell depleting therapies at highest risk for poor seroconversion and breakthrough infection.

Key Priorities Included:

- Defining correlates of protection and immunogenicity thresholds for diverse immunocompromised subgroups, including the role of cellular and humoral immunity, and the impact of specific immunosuppressive regimens.
- Longitudinal studies of vaccine durability and waning immunity, especially in the context of emerging SARS-CoV-2 variants and evolving immunosuppressive therapies.

- Comparative effectiveness studies of vaccine platforms and dosing strategies, including mRNA versus protein subunit vaccines, and the impact of additional (booster) doses on seroconversion and clinical outcomes.
- Evaluation of modified vaccine schedules and timing relative to immunosuppressive therapy, including optimal intervals for vaccination before or after transplantation, chemotherapy, or biologic therapy.
- Real-world effectiveness data, including breakthrough infection rates, hospitalization, and mortality, with subgroup analyses by age, comorbidity, and immunosuppressive regimen.
- Enhanced safety data for rare vaccine adverse events (e.g. myocarditis) and concerns specific to this patient population (i.e. risk of organ transplant rejection or autoimmune flare) with subgroup analyses by comorbidity and immunosuppressive regimen.
- Strategies to enhance vaccine response, such as temporary modification of immunosuppression, use of adjuvanted or higher-dose vaccines, and integration of nonpharmaceutical interventions and early therapeutics.
- Equity in vaccine access and uptake, with research on barriers to vaccination, disparities in coverage, and interventions to improve outreach in high-risk populations.

Addressing these priorities will require multicenter, prospective studies with harmonized outcome measures, robust subgroup analyses, and integration of immunologic and clinical endpoints. Enhanced vaccine regimens and tailored preventive strategies remain essential for protecting immunocompromised patients as COVID-19 transitions to endemicity.

References

1. Taylor CA, Patel K, Pham H, et al. COVID-19-Associated Hospitalizations Among U.S. Adults Aged ≥18 Years - COVID-NET, 12 States, October 2023-April 2024. MMWR Morb Mortal Wkly Rep 2024; 73(39): 869-75.
2. Panagiotakopoulos L, Moulia DL, Godfrey M, et al. Use of COVID-19 Vaccines for Persons Aged ≥6 Months: Recommendations of the Advisory Committee on Immunization Practices - United States, 2024-2025. MMWR Morb Mortal Wkly Rep 2024; 73(37): 819-24.
3. Viganò M, Beretta M, Lepore M, et al. Vaccination Recommendations in Solid Organ Transplant Adult Candidates and Recipients. Vaccines (Basel) 2023; 11(10).
4. American Society of Transplant Surgeons ASoT, The International Society for Health & Lung Transplantation (ISHLT). Joint Statement about COVID-19 Vaccination in Organ Transplant Candidates and Recipients, 2022.
5. ASH-ASTCT COVID-19 Vaccination for HCT and CAR T Cell Recipients: Frequently Asked Questions Available at: **https://www.hematology.org/covid-19/ash-astct-covid-19-vaccination-for-hct-and-car-t-cell-recipients**. Accessed October, 15 2025.
6. Silva-Pinto A, Abreu I, Martins A, Bastos J, Araújo J, Pinto R. Vaccination After Haematopoietic Stem Cell Transplant: A Review of the Literature and Proposed Vaccination Protocol. Vaccines (Basel) 2024; 12(12).
7. Dioverti V, Boghdadly ZE, Shahid Z, et al. Revised Guidelines for Coronavirus Disease 19 Management in Hematopoietic Cell Transplantation and Cellular Therapy Recipients (August 2022). Transplant Cell Ther 2022; 28(12): 810-21.
8. Bass AR, Chakravarty E, Akl EA, et al. 2022 American College of Rheumatology Guideline for Vaccinations in Patients With Rheumatic and Musculoskeletal Diseases. Arthritis Care Res (Hoboken) 2023; 75(3): 449-64.

9. Wilson A, Rahai N, Beck E, et al. Evaluating the Effectiveness of mRNA-1273.815 Against COVID-19 Hospitalization Among Adults Aged ≥ 18 Years in the United States. Infect Dis Ther 2025; 14(1): 199-216.
10. Payne AB, Novosad S, Sung HM, et al. Effectiveness of 2023-2024 COVID-19 vaccines against COVID-19-associated hospitalizations among adults aged ≥18 years with end stage kidney disease - United States, September 2023-April 2024. Vaccine 2025; 55: 127010.
11. Caffrey AR, Appaneal HJ, Lopes VV, et al. Effectiveness of BNT162b2 XBB vaccine in the US Veterans Affairs Healthcare System. Nat Commun 2024; 15(1): 9490.
12. Link-Gelles R, Rowley EAK, DeSilva MB, et al. Interim Effectiveness of Updated 2023-2024 (Monovalent XBB.1.5) COVID-19 Vaccines Against COVID-19-Associated Hospitalization Among Adults Aged ≥18 Years with Immunocompromising Conditions - VISION Network, September 2023-February 2024. MMWR Morb Mortal Wkly Rep 2024; 73(12): 271-6.
13. Link-Gelles R, Chickery S, Webber A, et al. Interim Estimates of 2024-2025 COVID-19 Vaccine Effectiveness Among Adults Aged ≥18 Years - VISION and IVY Networks, September 2024-January 2025. MMWR Morb Mortal Wkly Rep 2025; 74(6): 73-82.
14. Link-Gelles R, Rowley EAK, Irving SA, et al. Estimated 2023-2024 COVID-19 Vaccine Effectiveness in Adults. JAMA Netw Open 2025; 8(6): e2517402.
15. Nguyen JL, Mitratza M, Volkman HR, et al. Effectiveness of the BNT162b2 XBB.1.5-adapted vaccine against COVID-19 hospitalization related to the JN.1 variant in Europe: a test-negative case-control study using the id.DRIVE platform. EClinicalMedicine 2025; 79: 102995.
16. Chen DT, Copland E, Hirst JA, et al. Uptake, effectiveness and safety of COVID-19 vaccines in individuals at clinical risk due to immunosuppressive drug therapy or transplantation procedures: a population-based cohort study in England. BMC Med 2024; 22(1): 237.
17. Rossier LN, Décosterd NP, Matter CB, et al. SARS-CoV-2 vaccination in inflammatory bowel disease patients is not associated with flares: a retrospective single-centre Swiss study. Ann Med 2024; 56(1): 2295979.
18. Li M, Liao L, Huang W, et al. Patients with advanced cancer were treated with immune checkpoint inhibitors and injected with COVID-19 vaccine to improve their prognosis without increasing pancreatic related adverse events. Hum Vaccin Immunother 2024; 20(1): 2358575.
19. Ganelin-Cohen E, Buxbaum C, Bosak N, et al. The effect of COVID-19 vaccination on multiple sclerosis activity as reflected by MRI. Brain Behav 2024; 14(7): e3587.

Recommendation **CURRENT**

Influenza

Last Updated:
November 04, 2025

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- **Influenza Supplemental Material**

Keywords:
Immunocompromised, Influenza Vaccination, Adults and Children

Recommendation

In adults and children with compromised immunity*, the IDSA guideline panel recommends administering age-appropriate 2025-2026 Influenza vaccinations (*strong recommendation, moderate certainty of evidence*).

*see **Table 3** for risk group and timing.

Remarks

- Vaccination must be repeated on an annual basis to provide optimal protection.
- High dose or adjuvanted influenza vaccines provide more robust immune response, which may be of particular importance in immunocompromised patients.
- Household members and close contacts of immunocompromised patients should be up to date with Influenza vaccination.
- Live-attenuated influenza vaccines are contraindicated for immunocompromised hosts or their household contacts.
- It is appropriate for patients to receive COVID-19, influenza, and RSV vaccines together.

Table 3. Influenza Vaccination Guidance by Immunocompromised Population[1-10]

Group	Suggested timing of 2025-2026 Influenza vaccine*, **
Solid organ transplant	• At least 2 weeks pre-SOT; or ≥1 months post-SOT, may give earlier if influenza season has started
Hematologic malignancy	• Optimal timing includes ≥2 weeks before starting treatment and ≥ 3 months after last infusion ○ For B-cell depletion, consider ≥3-6 months after last infusion • If optimal timing not feasible based on influenza season, earlier administration reasonable (blunted immune response possible)
HCT/CAR-T	• Optimal timing includes ≥3 months after transplant or CAR-T treatment ○ For B-cell depletion, consider ≥3-6 months after last infusion • If optimal timing not feasible based on influenza season, administer earlier (blunted immune response possible)
Solid tumor chemotherapy	• Optimally at least 2 weeks before starting therapy; during/after is acceptable
Primary Immuno-deficiency	• Align with IVIG/SCIG or clinic access
Autoimmune immunosuppression	• Optimal timing includes ≥2 weeks before starting treatment and ≥ 3 months after last infusion ○ For B-cell depletion, consider ≥3-6 months after last infusion • If optimal timing not feasible based on timing of influenza season, earlier administration reasonable (blunted immune response possible)
HIV	• Align with preventive routine care

*Defer during most intense periods of acute transplant rejection treatment or severe/acute illness

** Since influenza vaccine is recommended annually, timing of vaccination is of particular concern. While response may be blunted if administered prior to the recommended interval, during the fall and winter months optimal timing of influenza vaccine in relation to immunosuppression will depend on local circulation of influenza virus.

Results

The search identified one test-negative case-control study [11] evaluating influenza vaccination in immunocompromised populations, which reported on vaccine effectiveness against hospitalization, and three studies [25-27] reporting on exacerbation of immunocompromising or autoimmune conditions.

Because direct evidence for vaccine effectiveness outcomes in immunocompromised populations was limited, indirect evidence from VIP analyses [28] conducted in the older adult population was included. This included 10 test-negative case control studies [11-20] for influenza-associated hospitalization, one cohort study [21] for all-cause mortality, and one study [20] for ICU admissions. No direct evidence for adverse events in immunocompromised populations was identified; therefore, indirect evidence from VIP analyses [28] in older adults (two studies [22-23] evaluating Guillain–Barré syndrome and two [22,24] evaluating serious adverse events) was included.

Table 4. GRADE Evidence Profile: Should Influenza vaccination vs. no vaccination be used in immunocompromised patients (adults and children)?

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Influenza vaccination	no vaccination	Relative (95% CI)	Absolute (95% CI)		
Influenza-associated hospitalization (Immunocompromised adults)												
1[1]	non-randomised studies	serious[a]	not serious	not serious	not serious[b]	none	212 cases 1,639 controls -	 2.0%[c]	**VE: 32%** (7-50%) **OR 0.68** (0.50 to 0.93)	- **631 fewer per 100,000** (from 990 fewer to 137 fewer)	⊕⊕⊕◯ Moderate[a,b]	CRITICAL
Influenza-associated hospitalization (Overall adults ≥65 yrs; test negative case-control studies)												
10[1,2,3,4,5,6,7,8,9,10]	non-randomised studies	serious[a]	not serious[d]	not serious	not serious	none	18,148 cases 138,698 controls -	 0.5%	**VE: 42%** (36-47%) **OR 0.58** (0.53 to 0.64)	- **209 fewer per 100,000** (from 234 fewer to 179 fewer)	⊕⊕⊕◯ Moderate[a,d]	CRITICAL
All-cause mortality (Overall adults ≥60 years)												
1[11]	non-randomised studies	serious[a]	not serious	serious[e]	serious[f]	none	68/7,372 (0.9%)	1,765/59,172 (3.0%)	**VE: 53%** (41-63%) **HR 0.47** (0.37 to 0.59)	**1,570 fewer per 100,000** (from 1,869 fewer to 1,212 fewer)	⊕◯◯◯ Very low[a,e,f]	CRITICAL
Severe Disease (ICU admission; in overall adults >18 years)												
1[10]	non-randomised studies	serious[a]	not serious	serious[e]	not serious	none	824 cases 12,644 controls -	 20.0%	**VE: 41%** (31-50%) **OR 0.59** (0.50 to 0.69)	- **71 fewer per 1,000** (from 89 fewer to 53 fewer)	⊕⊕◯◯ Low[a,e]	CRITICAL
Guillain Barre Syndrome (in overall adults ≥65 years)												
2[12,13]	non-randomised studies	serious[a]	not serious	not serious	not serious	none	163/31,234,097 (0.0005%)	186/31,234,097 (0.0005%)	**IRR 0.96** (0.73 to 1.27)	**0 more per 1,000,000** (from 2 fewer to 2 more)	⊕⊕⊕◯ Moderate[a]	CRITICAL
Severe adverse events (in overall adults/older adults)												
2[12, 14]	non-randomised studies	serious[a]	not serious	not serious	serious[g]	none	An SCCS including people on Medicare found no increased risk of ischemic or hemorrhagic stroke following various influenza vaccines overall but identified a statistically significant increased risk of a composite of ischemic stroke or TIA occurring 22-42 days after influenza vaccination (i.e. Medicare Advantage population, IRR 1.10, 95% CI, 1.02 to 1.17). [Lloyd 2025]. However, this translates into approximately 1 additional endpoint in 10,000 vaccinated Medicare Advantage enrollees. In addition, a Canadian cohort study found influenza vaccine within 30 days was associated with reduced risk of stroke (aHR 0.66, 95% CI, 0.65 to 0.68) [Tanaka 2024]				⊕⊕◯◯ Low[a,g]	CRITICAL
Exacerbation of immunocompromising or autoimmune condition												
1[15,16,17]	non-randomised studies	very serious[h]	not serious	not serious	not serious	none	A study evaluating safety of vaccination in 450 kidney transplant recipients found no significant difference between vaccinated and no-vaccinated groups in changes of eGFR, Serum creatinine (sCr) and occurrence of clinically significant proteinuria. None amongst the vaccinated group experienced leucopenia, neutropenia, or thrombocytopenia after vaccination. One study evaluating multiple sclerosis showed no increased risk of flares (OR 0.9, 95% CI 0.88 to 1.09). Conversely, another study showed no increased risk of flu vaccine and excess inflammatory bowel disease flares (aIRR 0.68, 95% CI 0.46 to 1.02).				⊕⊕◯◯ Low[h]	IMPORTANT

Vaccine Effectiveness

In immunocompromised adults, influenza vaccination was associated with 32% reduction in influenza-associated hospitalization (95% CI 7-50%) [11]. Comparable findings were observed in the older adult population with vaccine effectiveness estimates of 42% (95% CI 36-47%) [11-20]. One study reported 53% (95% CI 41-63%) lower risk of all-cause mortality with Influenza vaccination in older adults [21], and another study reported vaccine effectiveness of 41% (95% CI, 31–50%) against ICU admissions in similar populations [20].

Adverse Events

Two self-controlled case series found no evidence of increased risk of Guillain-Barre syndrome in older adults (IRR 0.96, 95% CI: 0.73 to 1.27) [22-23]. One study of Medicare beneficiaries also found no risk of ischemic or hemorrhagic stroke with various influenza vaccines overall, however an increased risk of a composite of ischemic stroke or transient ischemic attack (TIA) occurring 22-42 days after influenza vaccination (i.e. Medicare Advantage population, IRR 1.10, 95% CI, 1.02 to 1.17) was observed [22]. However, this translates into approximately 1 additional endpoint in 10,000 vaccinated Medicare Advantage enrollees. In addition, a Canadian cohort study found influenza vaccine within 30 days was associated with reduced risk of stroke (aHR 0.66, 95% CI, 0.65 to 0.68) [24]. A favorable safety profile was indicated from studies reporting on exacerbation of immunocompromising or autoimmune conditions. One study found no changes in renal function (eGFR, serum creatinine, or proteinuria) and no cases of leukopenia, neutropenia, or thrombocytopenia following vaccination in kidney transplant recipients [25]. Additionally, two studies found no risk of multiple sclerosis flares (OR 0.90, 95% CI 0.88–1.09) [27] or inflammatory bowel disease flares (aIRR 0.68, 95% CI 0.46–1.02) following vaccination [26].

Rationale for Recommendation

The panel agreed that the overall certainty of evidence is moderate due to evidence on Influenza vaccine effectiveness in immunocompromised patients mainly driven by the prevention of hospitalization. The moderate size of beneficial effects combined with little or no serious adverse effects justifies a strong recommendation for the administration of the 2025-2026 Influenza vaccine.

Implementation Considerations

Immunocompromised patients remain at increased risk for severe influenza virus infection and may have attenuated vaccine responses, necessitating tailored vaccination strategies (e.g., high dose or adjuvanted influenza vaccines result in better serologic response) and ongoing risk mitigation including access to treatment and preventative antivirals. Implementation of influenza vaccine recommendations in this population should address the following core considerations:

General Principles:

- All immunocompromised individuals aged ≥6 months should receive a seasonal influenza vaccine.
- Shared clinical decision-making is essential, allowing flexibility in timing and dosing to accommodate immunosuppressive therapy schedules, travel, and individual risk factors.

- Household members and close contacts should also receive inactivated seasonal influenza vaccines to reduce transmission risk.

Subgroup-Specific Considerations:

- Solid Organ Transplant (SOT): Vaccination is optimally timed ≥2 weeks pre-transplant or ≥1 months post-transplant, avoiding periods of pulse immunosuppression and active rejection. Consider earlier administration in the fall before peak influenza season, when possible. Hematopoietic Cell Transplant (HCT)/CAR-T: Vaccination is recommended ≥3 months post-HCT/CAR-T, or ≥3-6 months after B-cell depleting therapy, with earlier vaccination considered during periods of high community transmission.
- Hematologic Malignancy: Align vaccination with treatment cycles, ideally ≥2 weeks before new immunosuppression; defer during febrile neutropenia or severe illness. Consider earlier administration in the fall before peak influenza season, when possible.
- Solid Tumor Chemotherapy: Prefer vaccination ≥2 weeks before therapy, but vaccination during or after therapy is acceptable if needed; defer during severe illness. Consider earlier administration in the fall before peak influenza season when possible.
- Primary Immunodeficiency: Vaccinate when clinically stable, aligning with IVIG/SCIG schedules or clinic access; defer during acute illness. Consider earlier administration in the fall before peak influenza season when possible.
- Autoimmune Immunosuppression: Vaccinate ≥2 weeks prior to biologics or ≥3 months after therapy; ≥3-6 months after B-cell depletion; defer during severe flare or infection. Consider earlier administration in the fall before peak influenza season when possible.
- HIV: Vaccinate regardless of CD4 count or viral load, ideally when stable and aligned with preventive routine care; defer during acute illness. Consider earlier administration in the fall before peak influenza season when possible.

Additional Implementation Issues:

- Rapid access to antivirals targeting influenza virus and nonpharmaceutical interventions remain important adjuncts, especially for those with predicted poor vaccine responses or contraindications to vaccination.

Yearly influenza vaccination is critical for immunocompromised populations, with individualized schedules, and close coordination with clinical care. Ongoing communication, equitable access to vaccination and influenza treatments, and integration of preventive strategies are essential for optimal protection.

Research Priorities

Research priorities for influenza vaccination in immunocompromised patients should address critical gaps in immunogenicity, clinical effectiveness, and implementation strategies across heterogeneous populations.

Immunocompromised individuals—including those with solid organ transplants, hematologic malignancies, autoimmune diseases, and HIV—exhibit variable and often attenuated immune responses to influenza vaccines, with organ transplant recipients and those receiving B-cell depleting therapies at highest risk for poor seroconversion and breakthrough infection.

Key Priorities Include:

- Defining correlates of protection and immunogenicity thresholds for diverse immunocompromised subgroups, including the role of cellular and humoral immunity, and the impact of specific immunosuppressive regimens.
- Longitudinal studies of vaccine durability and waning immunity, especially in the context of changing influenza strains and evolving immunosuppressive therapies.
- Effectiveness studies of influenza vaccine platforms and dosing strategies and the impact of additional (booster) doses on seroconversion and clinical outcomes.
- Evaluation of modified vaccine schedules and timing relative to immunosuppressive therapy, including optimal intervals for vaccination before or after transplantation, chemotherapy, or biologic therapy.
- Real-world effectiveness data, including breakthrough infection rates, hospitalization, and mortality, with subgroup analyses by age, comorbidity, and immunosuppressive regimen.
- Enhanced safety data for suspected rare vaccine adverse events (e.g. Guillain-Barre Syndrome) and concerns specific to this patient population (i.e. risk of organ transplant rejection or autoimmune flare) with subgroup analyses by comorbidity and immunosuppressive regimen.
- Strategies to enhance vaccine response, such as temporary modification of immunosuppression, use of high dose or adjuvanted vaccines, and integration of nonpharmaceutical interventions and early therapeutics.
- Equity in vaccine access and uptake, with research on barriers to vaccination, disparities in coverage, and interventions to improve outreach in high-risk populations.

Addressing these priorities will require multicenter, prospective studies with harmonized outcome measures, robust stratified subgroup analyses, and integration of immunologic and clinical endpoints. Enhanced vaccine regimens and tailored preventive strategies remain essential for protecting immunocompromised patients from future endemic and pandemic influenza infections.

References

1. Viganò M, Beretta M, Lepore M, et al. Vaccination Recommendations in Solid Organ Transplant Adult Candidates and Recipients. Vaccines (Basel) 2023; 11(10)
2. Silva-Pinto A, Abreu I, Martins A, Bastos J, Araújo J, Pinto R. Vaccination After Haematopoietic Stem Cell Transplant: A Review of the Literature and Proposed Vaccination Protocol. Vaccines (Basel) 2024; 12(12)
3. Bass AR, Chakravarty E, Akl EA, et al. 2022 American College of Rheumatology Guideline for Vaccinations in Patients With Rheumatic and Musculoskeletal Diseases. Arthritis Care Res (Hoboken) 2023; 75(3): 449–64
4. Furlong E, Kotecha RS. Lessons learnt from influenza vaccination in immunocompromised children undergoing treatment for cancer. Lancet Child Adolesc Health. 2023 Mar;7(3):199-213. doi: 10.1016/S2352-4642(22)00315-7. Epub 2023 Jan 24. PMID: 36706776
5. Ison MG. Vaccines for Use in Special Populations: Immunocompromised Hosts. J Infect Dis. 2025;231(3):552-555. doi:10.1093/infdis/jiae508

6. Pérez-Romero P, Bulnes-Ramos A, Torre-Cisneros J, et al. Influenza vaccination during the first 6 months after solid organ transplantation is efficacious and safe. Clin Microbiol Infect. 2015;21(11):1040.e11-1040.e1.04E18. doi:10.1016/j.cmi.2015.07.014
7. Vijenthira A, Gong I, Betschel SD, Cheung M, Hicks LK. Vaccine response following anti-CD20 therapy: a systematic review and meta-analysis of 905 patients. Blood Adv. 2021;5(12):2624-2643. doi:10.1182/bloodadvances.2021004629
8. Bosaeed M, Kumar D. Seasonal influenza vaccine in immunocompromised persons. Hum Vaccin Immunother. 2018;14(6):1311-1322. doi:10.1080/21645515.2018.1445446
9. Grohskopf LA, Ferdinands JM, Blanton LH, Broder KR, Loehr J. Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices - United States, 2024-25 Influenza Season. MMWR Recomm Rep. 2024;73(5):1-25. Published 2024 Aug 29. doi:10.15585/mmwr.rr7305a1
10. Caldera F, Mercer M, Samson SI, Pitt JM, Hayney MS. Influenza vaccination in immunocompromised populations: Strategies to improve immunogenicity. Vaccine. 2021;39 Suppl 1:A15-A23. doi:10.1016/j.vaccine.2020.11.037
11. Lewis NM, Harker EJ,Cleary S,et al. Vaccine Effectiveness Against Influenza A(H1N1), A(H3N2), and B-Associated Hospitalizations-United States,September 1,2023-May 31,2024. J Infect Dis. Published online April 8,2025. doi:10.1093/infdis/jiaf185.
12. Gharpure R, Regan AK,Nogareda F,et al. Effectiveness of 2023 southern hemisphere influenza vaccines against severe influenza-associated illness: pooled estimates from eight countries using the test-negative design. Lancet Glob Health. 2025, doi:10.1016/S2214-109X(24)00473-X, 13(2):e203-e211.
13. Martínez-Baz I, Navascués A,Trobajo-Sanmartín C,et al. Effectiveness of influenza vaccination in preventing confirmed influenza cases and hospitalizations in Northern Spain,2023/24 season: A population-based test-negative case-control study. Int J Infect Dis. 2025, doi: 10.1016/j.ijid.2024.107364, 151:107364.
14. Rose AM, Lucaccioni H,Marsh K,et al. Interim 2024/25 influenza vaccine effectiveness: eight European studies,September 2024 to January 2025. Euro Surveill. 2025, doi:10.2807/1560-7917.ES.2025.30.7.2500102, 30(7):2500102.
15. Emborg HD, Valentiner-Branth P,Trebbien R,Bolt Botnen A,Grove Krause T,Søborg B. Enhanced influenza vaccines impact effectiveness in individuals aged 65 years and older, Denmark,2024/25 influenza season up to 4 March 2025. Euro Surveill. 2025, doi:10.2807/1560-7917.ES.2025.30.12.2500174, 30(12):2500174.
16. Maurel M, Howard J,Kissling E,et al. Interim 2023/24 influenza A vaccine effectiveness: VEBIS European primary care and hospital multicentre studies,September 2023 to January 2024. Euro Surveill. 2024, doi:10.2807/1560-7917.ES.2024.29.8.2400089, 29(8):2400089.
17. Frutos AM, Cleary S,Reeves EL,et al. Interim Estimates of 2024-2025 Seasonal Influenza Vaccine Effectiveness - Four Vaccine Effectiveness Networks,United States,October 2024-February 2025. MMWR Morb Mortal Wkly Rep. 2025, doi:10.15585/mmwr.mm7406a2, 74(6):83-90., Published,2025, Feb,27.
18. Frutos AM, Price AM, Harker E,et al. Interim Estimates of 2023-24 Seasonal Influenza Vaccine Effectiveness - United States. MMWR Morb Mortal Wkly Rep. 2024, doi:10.15585/mmwr.mm7308a3, 73(8):168-174., Published,2024, Feb,29.
19. Silva-Afonso RF, Platas-Abenza G,Guerrero-Soler M,et al. Effectiveness of immunization strategies for preventing severe acute respiratory infection during the 2023/2024 season in a Spanish health department. Enferm Infecc Microbiol Clin (Engl Ed). 2025, doi: 10.1016/j.eimce.2025.03.017, 43(7):435-443.

20. Tenforde MW, Reeves EL,Weber ZA,et al. Influenza Vaccine Effectiveness Against Hospitalizations and Emergency Department or Urgent Care Encounters for Children,Adolescents,and Adults During the 2023-2024 Season,United States. Clin Infect Dis. 2025, doi:10.1093/cid/ciae597, 81(3):667-678.
21. Acuti Martellucci C, Rosso A,Zauli E,et al. The Effectiveness of Four Quadrivalent,Inactivated Influenza Vaccines Administered Alone or in Combination with Pneumococcal and/or SARS-CoV-2 Vaccines: A Population-Wide Cohort Study. Vaccines (Basel). 2025, doi:10.3390/vaccines13030309, 13(3):309., Published,2025, Mar,13.
22. Lloyd PC, Acharya G,Zhao H,et al. Safety monitoring of health outcomes following influenza vaccination during the 2023-2024 season among U.S. Medicare beneficiaries aged 65 years and older. Vaccine. 2025, doi: 10.1016/j.vaccine.2025.127069, 53:127069.
23. Shi XC, Gruber JF,Ondari M,et al. Assessment of potential adverse events following the 2022-2023 seasonal influenza vaccines among U.S. adults aged 65 years and older. Vaccine. 2024, doi: 10.1016/j.vaccine.2024.04.051, 42(15):3486-3492.
24. Tanaka K, Demchuk AM,Malo S,Hill MD,Holodinsky JK. Risk of stroke within 3,7,14,21 and 30 days after influenza vaccination in Alberta,Canada: A population-based study. Eur J Neurol. 2024, doi:10.1111/ene.16172, 31(4):e16172.
25. Zawiasa-Bryszewska A, Nowicka M,Górska M,et al. Safety and Efficacy of Influenza Vaccination in Kidney Graft Recipients in Late Period After Kidney Transplantation. Vaccines (Basel). 2025, doi:10.3390/vaccines13020189, 13(2):189., Published,2025, Feb,14.
26. Nakafero G, Grainge MJ,Card T,Mallen CD,Nguyen Van-Tam JS,Abhishek A. Uptake,safety and effectiveness of inactivated influenza vaccine in inflammatory bowel disease: a UK-wide study. BMJ Open Gastroenterol. 2024, doi:10.1136/bmjgast-2024-001370, 11(1):e001370., Published,2024, Jun,18.
27. Grimaldi L, Papeix C,Hamon Y,et al. Vaccines and the Risk of Hospitalization for Multiple Sclerosis Flare-Ups. JAMA Neurol. 2023, doi:10.1001/jamaneurol.2023.2968, 80(10):1098-1104.
28. Scott J, Abers MS, Marwah HK, McCann NC, Meyerowitz EA, Richterman A, Fleming DF, Holmes EJ, Moat LE, Redepenning SG, Smith EA, Stoddart CJ, Sundaram ME, Ulrich AK, Alba C, Anderson CJ, Arpey MK, Borre E, Ladines-Lim J, Mehr AJ, Rich K, Watts C, Basta NE, Jarolimova J, Walensky RP, Dugdale CM. Updated Evidence for Covid-19, RSV, and Influenza Vaccines for 2025-2026. N Engl J Med. 2025 Oct 29.

Recommendation **CURRENT**

Respiratory Syncytial Virus (RSV)

Last Updated:
November 04, 2025

Authors:
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- **Respiratory Syncytial Virus Supplemental Material**

Keywords:
Immunocompromised, RSV Vaccination, Adults and Children

Recommendation

In adults and adolescents with compromised immunity*, the IDSA guideline panel recommends administering age-appropriate RSV vaccinations (*strong recommendation, moderate certainty of evidence*).

*see **Table 5** for risk group and timing.

Remarks

- FDA approved RSV vaccines for adults include RSVPreF3, RSVPreF, and mRNA-1345.
- For immunocompromised patients <18 years, administration should be guided by shared decision making.
- Solid organ transplant candidates, especially lung transplant, should ideally be vaccinated pre-transplant.
- Household members and close contacts of immunocompromised patients should be up to date with RSV vaccination, if eligible.
- It is appropriate for patients to receive COVID-19, influenza, and RSV vaccines together.

Table 5. RSV Vaccination Guidance by Immunocompromised Population[1-5]

Group	Suggested timing of RSV vaccine*, **
Solid organ transplant	• At least 2 weeks pre-SOT; or ≥6 months post-SOT. Can be given as early as 1 month after transplant during RSV season
Hematologic malignancy	• Optimal timing includes ≥2 weeks before starting treatment and ≥ 6 months after last infusion o For B-cell depletion, consider ≥6 months after last infusion • If optimal timing not feasible, administer during treatment (blunted immune response likely)
HCT/CAR-T	• Optimal timing includes ≥6 months after transplant or CAR-T treatment o For B-cell depletion, consider ≥6 months after last infusion • If optimal timing not feasible, administer during treatment (blunted immune response likely)
Solid tumor chemotherapy	• At least 2 weeks before starting therapy; during/after is acceptable
Primary Immuno-deficiency	• Align with IVIG/SCIG or clinic access
Autoimmune immunosuppression	• Optimal timing includes ≥2 weeks before starting treatment and ≥ 3-6 months after last infusion o For B-cell depletion, consider ≥6 months after last infusion • If optimal timing not feasible, administer during treatment (blunted immune response likely)
HIV	• Align with preventive routine care

*Defer during acute transplant rejection treatment or severe/acute illness

**Use shared-decision making for early windows based on levels of community virus circulation

Results

The search identified 2 test negative case control studies [6,7] that reported on RSV-associated hospitalization in immunocompromised adults. No studies were identified reported on other vaccine effectiveness or adverse events outcomes in this population. Therefore, indirect evidence from analyses conducted in older adults from VIP [11] was included. This included one case-control study for critical illness [6], one RCT for serious adverse events [8], and one self-controlled case series for Guillain-Barre syndrome [7]. Two additional RCTs [9,10] reporting on serious adverse events with RSV vaccination published before search period were also included, aiming for a comprehensive assessment of comparative SAEs.

Table 6. GRADE Evidence Profile: Should RSV vaccination vs. no vaccination be used in immunocompromised patients (adults and children)?

Vaccine Effectiveness

In immunocompromised population, RSV vaccination was found to be 70% effective against RSV associated hospitalization (pooled estimate from 2 studies, 95% CI: 66-73%) [6,7]. One study reported vaccine effectiveness of 81% (95% CI: 52-92%) against composite outcome of critical illness, defined as ICU admission or in-hospital death or both in older adults [6].

Adverse Events

One self-controlled case series found an increased risk of Guillain-Barre syndrome with an incidence rate ratio of 2.1 (95% CI: 1.5-2.9) attributing to 11.2 excess cases per 1,000,000 doses [7]. Three randomized controlled trials reported relative risk of 1.02 (95% CI: 0.96-1.09) for serious adverse events in older adults, indicating comparable risks between vaccinated and unvaccinated groups [8-10].

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	RSV vaccination	no vaccination	Relative (95% CI)	Absolute (95% CI)		
RSV-associated hospitalization (Immunocompromised adults)												
2[1,2]	non-randomised studies	serious[a]	not serious	not serious	not serious	none[b]	8,637 cases 137,156 controls -	 1.0%	**VE: 70% (66-73)** **OR 0.30** (0.27 to 0.34)	- **698 fewer per 100,000** (from 728 fewer to 658 fewer)	⨁⨁⨁◯ Moderate[a,b]	CRITICAL
Critical illness (ICU admission or in-hospital death or both; in immunocompetent adults ≥60 yrs)												
1[1]	non-randomised studies	serious[a]	not serious	serious[c]	not serious	none	262 cases 26,669 controls -	 0.2%	**VE: 81% (52–92)** **OR 0.19** (0.08 to 0.48)	- **162 fewer per 100,000** (from 184 fewer to 104 fewer)	⨁⨁◯◯ Low[a,c]	CRITICAL
Serious adverse events (SAEs; in overall adults ≥60 yrs)												
2[3,4,5]	randomised trials	not serious[a]	not serious	not serious	not serious	none	1,795/37,187 (4.8%)	1,732/36,845 (4.7%)	**RR 1.03** (0.97 to 1.09)	**1 more per 1,000** (from 1 fewer to 4 more)	⨁⨁⨁⨁ High[a]	CRITICAL
Gullian-Barre Syndrome (GBS; in overall adults ≥60 yrs)												
1[2]	non-randomised studies	serious[a]	not serious	not serious	not serious	none	102/4,746,518 (0.03%)	-	**IRR 2.1** (1.5 to 2.9)	**11.2 excess cases per 1,000,000 doses** (from 7.2 to 14.1 excess cases)	⨁⨁⨁◯ Moderate[a]	CRITICAL
Exacerbation of immunocompromising or autoimmune condition												
0							No comparative evidence informing this outcome was identified.				-	IMPORTANT

Rationale for Recommendation

The panel agreed that the overall certainty of evidence is moderate due to evidence on RSV vaccine effectiveness in immunocompromised patients driven by the prevention of hospitalization. The large size of beneficial effects combined with little or no serious adverse

effects justifies a strong recommendation for the administration of the RSV vaccine in immunocompromised population.

Implementation Considerations

Immunocompromised patients remain at increased risk for severe RSV and may have attenuated vaccine responses, necessitating tailored vaccination strategies and ongoing risk mitigation. Implementation of RSV vaccine recommendations in this population should address the following core considerations:

General Principles:

- All immunocompromised individuals aged ≥18 years should receive the RSV vaccine.
- For immunocompromised patients <18 years, administration should be guided by shared decision making.
- Majority of the evidence came from the protein subunit vaccines.
- Currently, only a single dose is recommended.
- Shared clinical decision-making is essential, allowing flexibility in timing and dosing to accommodate immunosuppressive therapy schedules, travel, and individual risk factors.
- Eligible household members and close contacts should be up to date with RSV vaccination to reduce transmission risk.

Subgroup-Specific Considerations:

- Solid Organ Transplant (SOT): Vaccination is optimally timed ≥2 weeks pre-transplant. Ideal timing of RSV vaccination after SOT is unknown. Consider administering RSV vaccine as early as 1 month after induction/transplant during RSV season and delaying vaccination up to 6 months if outside RSV season to ensure best immunogenicity. If vaccine is given earlier than the optimal timing, consider re-dose.
- Hematopoietic Cell Transplant (HCT)/CAR-T: Vaccination is recommended ≥3 months post-HCT/CAR-T, or ≥6 months after B-cell depleting therapy, with earlier vaccination considered during high community transmission. If vaccine is given earlier than the optimal timing, consider re-dose.
- Hematologic Malignancy: Align vaccination with treatment cycles, ideally ≥2 weeks before new immunosuppression; defer during febrile neutropenia or severe illness. Consider vaccination during high community transmission. If vaccine is given earlier than the optimal timing, consider re-dose.
- Solid Tumor Chemotherapy: Prefer vaccination ≥2 weeks before therapy, but vaccination during or after therapy is acceptable if needed; defer during severe illness. Consider vaccination during high community transmission. If vaccine is given earlier than the optimal timing, consider re-dose.
- Primary Immunodeficiency: Vaccinate when clinically stable, aligning with IVIG/SCIG schedules or clinic access; defer during acute illness. Consider vaccinating during high community transmission.
- Autoimmune Immunosuppression: Vaccinate ≥2 weeks prior to biologics or ≥3 months after therapy; ≥6 months after B-cell depletion; defer during severe flare or infection. Consider during high community transmission. If vaccine is given earlier than the optimal timing, consider re-dose.

- HIV: Vaccinate regardless of CD4 count or viral load, ideally when stable and aligned with preventive routine care; defer during acute illness. Consider vaccinating during high community transmission. If vaccine is given before immune reconstitution, consider re-dose.

Additional Implementation Issues:

- Vaccine effectiveness is lower than in the immunocompetent population supporting the need for ongoing risk assessment based on levels of community transmission.
- Rapid access to immunoglobulin therapy and, nonpharmaceutical interventions remain important adjuncts, especially for those with poor vaccine responses or contraindications. FDA approved antiviral for RSV has limited efficacy.
- Patients may self-attest to immunocompromised status for vaccine eligibility.

Staying up to date with RSV vaccination is critical for immunocompromised populations, with individualized schedules, and close coordination with clinical care. Ongoing communication, equitable access, and integration of preventive strategies are essential for optimal protection.

Research Priorities

Research priorities for RSV vaccination in immunocompromised patients should address critical gaps in immunogenicity, clinical effectiveness, adverse effects, and implementation strategies across heterogeneous populations. Immunocompromised individuals—including those with solid organ transplants, Hematopoietic Cell Transplant (Hematopoietic Cell Transplant /CAR-T, hematologic malignancies, autoimmune diseases, and HIV)—exhibit variable and often attenuated immune responses to vaccines, with organ transplant recipients and those receiving B-cell depleting therapies at highest risk for poor seroconversion and breakthrough infection.

The need for future booster doses of the RSV vaccine requires further investigation.

Key Priorities Include:

- Defining correlates of protection and immunogenicity thresholds for diverse immunocompromised subgroups, including the role of cellular and humoral immunity, and the impact of specific immunosuppressive regimens.
- Longitudinal studies of vaccine durability and waning immunity, potential need for booster doses and evolving immunosuppressive therapies.
- Comparative effectiveness studies of vaccine platforms and dosing strategies, including mRNA versus protein subunit vaccines, and the impact of additional (booster) doses on seroconversion and clinical outcomes.
- Evaluation of modified vaccine schedules and timing relative to immunosuppressive therapy, including optimal intervals for vaccination before or after transplantation, chemotherapy, or biologic therapy.
- Real-world effectiveness data, including breakthrough infection rates, hospitalization, and mortality, with subgroup analyses by age, comorbidity, and immunosuppressive regimen.
- Enhanced safety data for rare vaccine adverse events (e.g. Guillain-Barre Syndrome) and concerns specific to this patient population (i.e. risk of organ transplant rejection or exacerbation of immunocompromising or autoimmune condition) with subgroup analyses by comorbidity and immunosuppressive regimen.

- Strategies to enhance vaccine response, such as temporary modification of immunosuppression, use of adjuvanted vaccines, and integration of nonpharmaceutical interventions and early therapeutics.
- Use of RSV vaccine in under 18 years.
- Equity in vaccine access and uptake, with research on barriers to vaccination, disparities in coverage, and interventions to improve outreach in high-risk populations.

Addressing these priorities will require multicenter, prospective studies with harmonized outcome measures, robust subgroup analyses, and integration of immunologic and clinical endpoints. Enhanced vaccine regimens and tailored preventive strategies remain essential for protecting immunocompromised patients.

References

1. Viganò M, Beretta M, Lepore M, et al. Vaccination Recommendations in Solid Organ Transplant Adult Candidates and Recipients. Vaccines (Basel) 2023; 11(10).
2. Silva-Pinto A, Abreu I, Martins A, Bastos J, Araújo J, Pinto R. Vaccination After Haematopoietic Stem Cell Transplant: A Review of the Literature and Proposed Vaccination Protocol. Vaccines (Basel) 2024; 12(12).
3. Bass AR, Chakravarty E, Akl EA, et al. 2022 American College of Rheumatology Guideline for Vaccinations in Patients With Rheumatic and Musculoskeletal Diseases. Arthritis Care Res (Hoboken) 2023; 75(3): 449-64.
4. Almeida NC, Parameswaran L, DeHaan EN, et al. Immunogenicity and Safety of the Bivalent Respiratory Syncytial Virus Prefusion F Subunit Vaccine in Immunocompromised or Renally Impaired Adults. Vaccines (Basel). 2025;13(3):328. Published 2025 Mar 19. doi:10.3390/vaccines13030328
5. Kamboj M, Bohlke K, Baptiste DM, et al. Vaccination of Adults With Cancer: ASCO Guideline. J Clin Oncol. 2024;42(14):1699-1721. doi:10.1200/JCO.24.00032
6. Payne AB, Watts JA,Mitchell PK,et al. Respiratory syncytial virus (RSV) vaccine effectiveness against RSV-associated hospitalisations and emergency department encounters among adults aged 60 years and older in the USA,October,2023,to March,2024: a test-negative design analysis. Lancet. 2024, doi:10.1016/S0140-6736(24)01738-0, 404(10462):1547-1559.
7. Fry SE, Terebuh P,Kaelber DC,Xu R,Davis PB. Effectiveness and Safety of Respiratory Syncytial Virus Vaccine for US Adults Aged 60 Years or Older. JAMA Netw Open. 2025, doi:10.1001/jamanetworkopen.2025.8322, 8(5):e258322.,Published,2025,May,1.
8. Walsh EE, Eiras D,Woodside J,et al. Efficacy,Immunogenicity,and Safety of the Bivalent RSV Prefusion F (RSVpreF) Vaccine in Older Adults Over 2 RSV Seasons. Clin Infect Dis. Published online February 10,2025. doi:10.1093/cid/ciaf061.
9. Papi A, Ison MG,Langley JM,et al. Respiratory Syncytial Virus Prefusion F Protein Vaccine in Older Adults. N Engl J Med. 2023, doi:10.1056/NEJMoa2209604, 388(7):595-608.
10. Wilson E, Goswami J,Baqui AH,et al. Efficacy and Safety of an mRNA-Based RSV PreF Vaccine in Older Adults. N Engl J Med. 2023, doi:10.1056/NEJMoa2307079, 389(24):2233-2244.
11. Scott J, Abers MS, Marwah HK, McCann NC, Meyerowitz EA, Richterman A, Fleming DF, Holmes EJ, Moat LE, Redepenning SG, Smith EA, Stoddart CJ, Sundaram ME, Ulrich AK, Alba C, Anderson CJ, Arpey MK, Borre E, Ladines-Lim J, Mehr AJ, Rich K,

Watts C, Basta NE, Jarolimova J, Walensky RP, Dugdale CM. Updated Evidence for Covid-19, RSV, and Influenza Vaccines for 2025-2026. N Engl J Med. 2025 Oct 29.

Notes

Acknowledgments

We thank Lindsey Fraser-Green for medical librarian support (creation and execution of literature searches) and Genet Demisashi, Loretta Dzanya, Jonathan Heald, and Dana Wollins for project coordination.

Lindsey Baden served as Chair and oversaw cross-subgroup integration. Anoma Nellore (COVID-19), Paul Goepfert (Influenza), and Chen Sabrina Tan (RSV) served as subgroup leads. Members of the COVID-19 subgroup included Kristina Bajema, Katherine Belden, and Dean Blumberg; the Influenza subgroup included Morgan J. Katz, Daniel Kaul, and Tanvi Sharma; and the RSV subgroup included Shweta Anjan, Ella J. Ariza-Heredia, Francisco Magana, and Timothy Minniear.

For COVID-19, Yngve Falck-Ytter and Elizabeth York served as lead methodologists; Dipleen Kaur and Jennifer Loveless provided methodological support. For Influenza and RSV, Yngve Falck-Ytter and Dipleen Kaur served as lead methodologists; Jennifer Loveless and Elizabeth York provided methodological support. All authors contributed to drafting and revising the guideline and approved the final version and recommendations.

Conflicts of Disclosure

Possible conflicts of interest. Evaluation of relationships as potential conflicts of interest is determined by a review process. The assessment of disclosed relationships for possible COIs is based on the relative weight of the financial relationship (i.e., monetary amount) and the relevance of the relationship (i.e., the degree to which an association might reasonably be interpreted by an independent observer as related to the topic or recommendation of consideration).

The following panelists disclosed relationships with companies that own products **unrelated to the topic of COVID-19, Influenza, and RSV**: **A.N** receives research funding from National Institutes of Health (NIH); **C.S.T** receives research funding from NIH and Eurofin-Viracor; **D.K** received research funding from Nobelpharma and National Institute of Allergy and Infectious Diseases (NIAID); served as a non-promotional (CME) speaker for CME Outfitters; **E.J.A.H** received research funding from ASCO and receives research funding from SoftDev Incorporated; **K.B** receives research funding from VA Cooperative Studies Program; **L.B** receives research funding from the NIH and the NIAID, serves as Editor for New England Journal of Medicine, and serves as an advisor for the Biomedical Advanced Research and Development Authority (BARDA)/NIH and FDA; **M.J.K** serves as an advisor for Skinclique, receives research funding from the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Disease Control and Prevention (CDC), and provides expert testimony for law firms on infectious disease related issues; **P.G** receives research funding from NIAID; and **T.M** receives research funding from NIAID.

The following panelists have relationships with companies that own products **related to the topic of COVID-19 and RSV**: **P.G** received research funding from Pfizer (concluded prior to joining the panel); and **D.K** receives research funding from Pfizer.

Update History

November 4, 2025

As of November 4, 2025, IDSA has released new recommendations on the use of influenza and RSV (respiratory syncytial virus) vaccines. The current guidelines are available on the IDSA website and will be published in Clinical Infectious Diseases (CID) at a later date.

October 17, 2025

As of October 17, 2025, these rapid guidelines include recommendations only for COVID-19 vaccinations. Additional guidance on the use of Influenza and Respiratory Syncytial Virus (RSV) vaccinations will be added in the coming weeks. The current guidelines are available on the IDSA website and will be published in Clinical Infectious Diseases (CID) at a later date.