Recommendations from the Combined Immunization Schedule Work Group for the 2025 Immunization Schedules for Children/Adolescents and Adults

Sybil Cineas, MD, FAAP, FACP (ACIP Combined Immunization WG Chair)
Nanda Issa, MD (CDC Co-Lead)
Patricia Wodi, MD (CDC acting Co-Lead)

ACIP Meeting
October 24, 2024

2025 Update to Adult Immunization Schedule

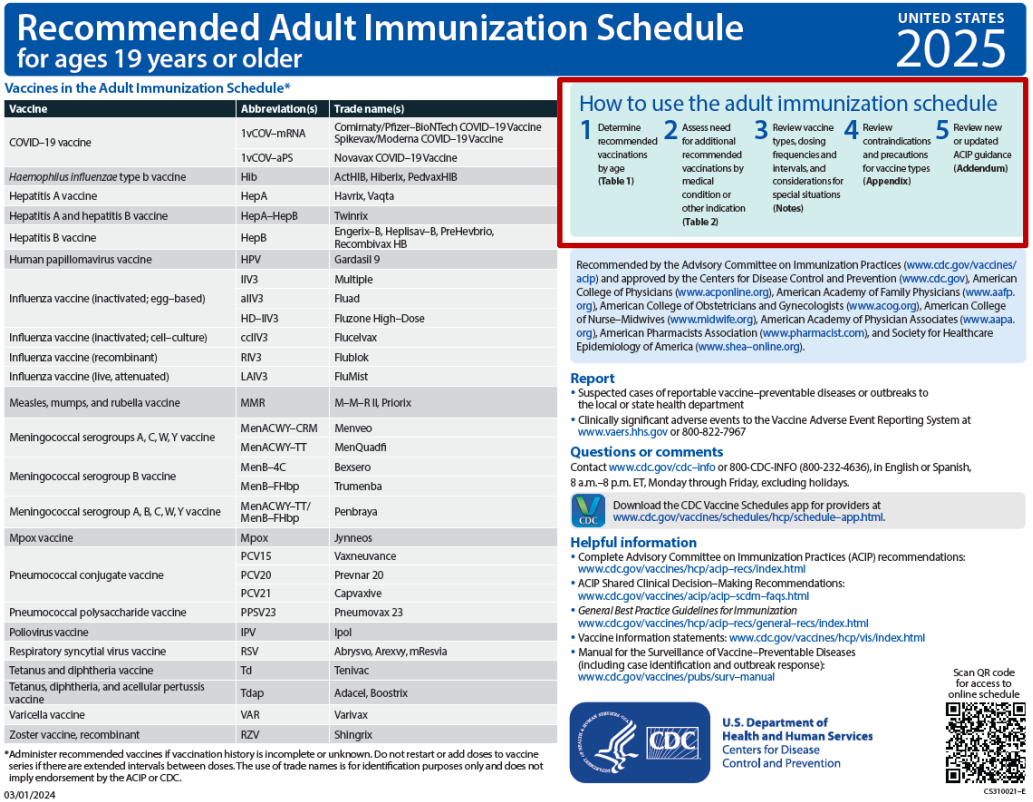
Age 19 years or older

Dr. Patricia Wodi

How to Use the Immunization Schedule

Sections

- Cover Page
- Table 1: Age-based
- Table 2: Medical indication
- Vaccination notes
- Appendix: contraindications and precautions
- Addendum: updates after schedule is published



Recommended Adult Immunization Schedule
for ages 19 years or older

UNITED STATES 2025

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Meningococcal serogroup A, B, C, W, Y vaccine	MenACWY–TT/ MenB–FHbp	Penbraya
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	PCV20	Prevnar 20
	PCV21	Capvaxdive
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23
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Respiratory syncytial virus vaccine	RSV	Abrysvo, Arexvy, mResvia
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Varicella vaccine	VAR	Varivax
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2 Assess need for additional recommended vaccinations by medical condition or other indication **(Table 2)**

3 Review vaccine types, dosing frequencies and intervals, and considerations for special situations **(Notes)**

4 Review contraindications and precautions for vaccine types **(Appendix)**

5 Review new or updated ACIP guidance **(Addendum)**

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Proposed Updates to the 2025 Adult Immunization Schedule

Changes to Tables

- Cover Page
- Table 1
- Table 2

Changes to Vaccination Notes

- **COVID-19**
- Hepatitis B
- **Influenza**
- **Meningococcal**
- Mpox
- **Pneumococcal**
- **RSV vaccine**
- Tdap

Changes to Appendix

- **Pneumococcal**
- Hepatitis B

1. Use of COVID-19 Vaccines for Persons Aged ≥6 Months: Recommendations of the Advisory Committee on Immunization Practices — United States, 2024–2025 | MMWR (cdc.gov)
2. Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2024–25 Influenza Season | MMWR (cdc.gov)
3. Use of 21-Valent Pneumococcal Conjugate Vaccine Among U.S. Adults: Recommendations of the Advisory Committee on Immunization Practices — United States, 2024 | MMWR (cdc.gov)
4. Use of Respiratory Syncytial Virus Vaccines in Adults Aged ≥60 Years: Updated Recommendations of the Advisory Committee on Immunization Practices — United States, 2024 | MMWR (cdc.gov)

Cover page

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for ages 19 years or older

UNITED STATES
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Table 1

Immunization schedule by age group

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

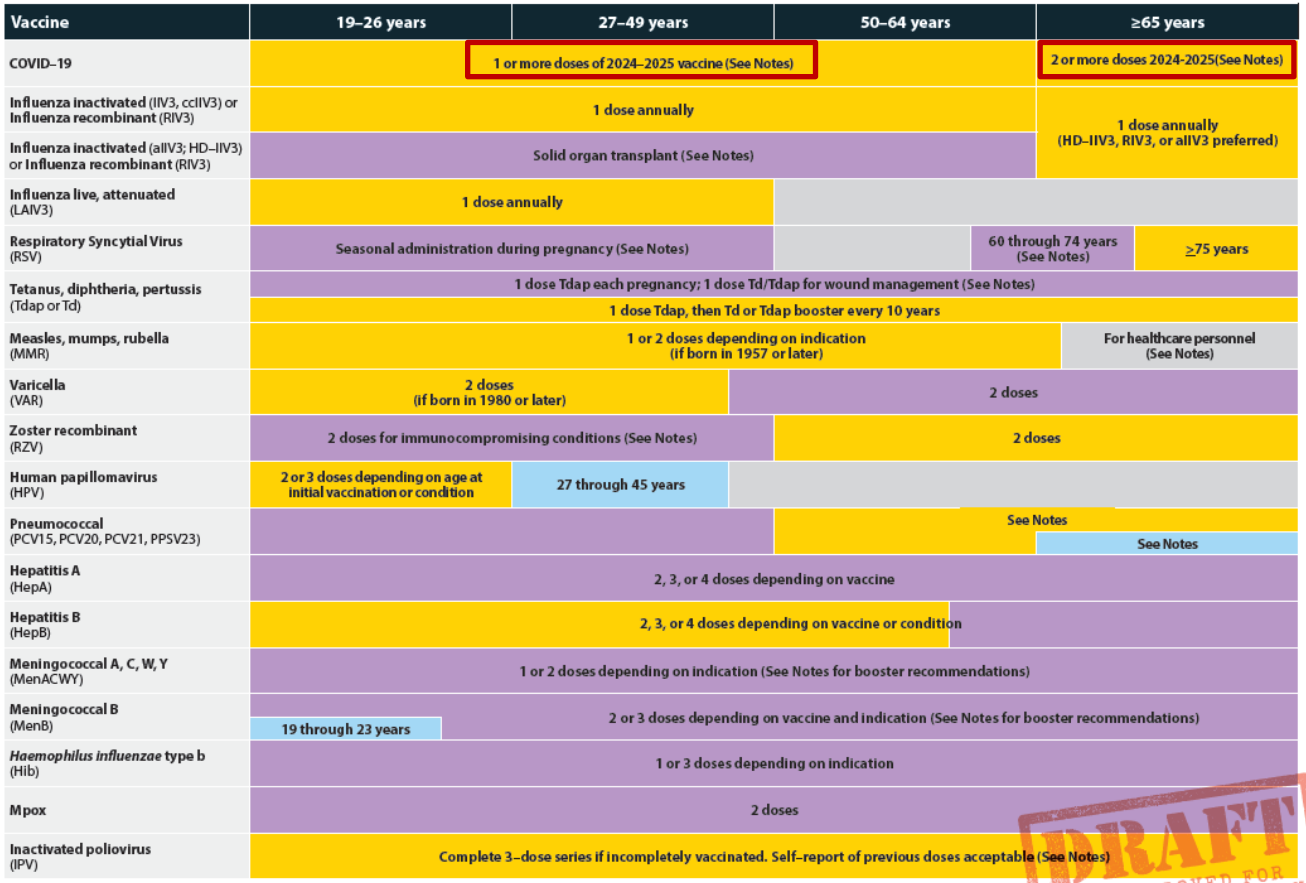

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
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Influenza inactivated (IIV3, ccIIV3) or Influenza recombinant (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) or Influenza recombinant (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy (See Notes)		60 through 74 years (See Notes)	≥75 years
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)			For healthcare personnel (See Notes)
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (See Notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23)			See Notes	
				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

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

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No Guidance/ Not Applicable

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Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

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

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

Recommended vaccination based on shared clinical decision–making

No Guidance/ Not Applicable

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID–19	1 or more doses of 2024–2025 vaccine (See Notes)			2 or more doses 2024-2025(See Notes)
Influenza inactivated (IIV3, ccIIV3) or Influenza recombinant (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) or Influenza recombinant (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy (See Notes)		60 through 74 years (See Notes)	≥75 years
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)			For healthcare personnel (See Notes)
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (See Notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23)			See Notes	
				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

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

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

Recommended vaccination based on shared clinical decision–making

No Guidance/ Not Applicable

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID–19	1 or more doses of 2024–2025 vaccine (See Notes)			2 or more doses 2024-2025(See Notes)
Influenza inactivated (IIV3, ccIIV3) or Influenza recombinant (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) or Influenza recombinant (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy (See Notes)		60 through 74 years (See Notes)	≥75 years
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)			For healthcare personnel (See Notes)
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (See Notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23)			See Notes	See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

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

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

Recommended vaccination based on shared clinical decision–making

No Guidance/ Not Applicable

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID–19	1 or more doses of 2024–2025 vaccine (See Notes)			2 or more doses 2024-2025(See Notes)
Influenza inactivated (IIV3, ccIIV3) or Influenza recombinant (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) or Influenza recombinant (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy (See Notes)		60 through 74 years (See Notes)	≥75 years
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)			For healthcare personnel (See Notes)
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (See Notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23)			See Notes	See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

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

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

Recommended vaccination based on shared clinical decision–making

No Guidance/ Not Applicable

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID–19	1 or more doses of 2024–2025 vaccine (See Notes)			2 or more doses 2024-2025(See Notes)
Influenza inactivated (IIV3, ccIIV3) or Influenza recombinant (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) or Influenza recombinant (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy (See Notes)		60 through 74 years (See Notes)	≥75 years
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)			For healthcare personnel (See Notes)
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (See Notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23)			See Notes	See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

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

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

Recommended vaccination based on shared clinical decision–making

No Guidance/ Not Applicable

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2025

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID–19	1 or more doses of 2024–2025 vaccine (See Notes)			2 or more doses 2024-2025(See Notes)
Influenza inactivated (IIV3, ccIIV3) or Influenza recombinant (RIV3)	1 dose annually			1 dose annually (HD–IIV3, RIV3, or aIIV3 preferred)
Influenza inactivated (aIIV3; HD–IIV3) or Influenza recombinant (RIV3)	Solid organ transplant (See Notes)			
Influenza live, attenuated (LAIV3)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy (See Notes)		60 through 74 years (See Notes)	≥75 years
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)			For healthcare personnel (See Notes)
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (See Notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PCV21, PPSV23)			See Notes	See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication (See Notes for booster recommendations)			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication (See Notes for booster recommendations)		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox	2 doses			
Inactivated poliovirus (IPV)	Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)			

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

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

Recommended vaccination based on shared clinical decision–making

No Guidance/ Not Applicable

Table 2

Immunization schedule by medical indication

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2025

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count: <15% or <200mm³	HIV infection CD4 percentage and count: ≥15% and ≥200mm³	Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End-stage renal disease or on dialysis	Chronic liver disease; alcoholism[a]	Diabetes	Healthcare Personnel[b]
COVID-19		See Notes									
Influenza inactivated Influenza recombinant		Solid organ transplant See Notes	1 dose annually								
LAIV3					1 dose annually if age 19–49 years		1 dose annually if age 19–49 years				
RSV	Seasonal administration (See Notes)	See Notes				See Notes			Liver disease (See Notes)	See Notes	
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	*										
VAR	*			See Notes							
RZV		See Notes									
HPV	*	3 dose series if indicated									
Pneumococcal											
HepA											
Hep B	See Notes									Age ≥ 60 years	
MenACWY											
MenB											
Hib		HSCT: 3 doses[c]				Asplenia: 1 dose					
Mpox	See Notes				See Notes						See Notes
IPV		Complete 3-dose series if incompletely vaccinated. Self-report of previous doses acceptable (See Notes)									

Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity

Not recommended for all adults, but recommended for some adults based on either age **OR** increased risk for or severe outcomes from disease

Recommended vaccination based on shared clinical decision-making

Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.

Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction

Contraindicated or not recommended
*Vaccinate after pregnancy, if indicated

No Guidance / Not Applicable

a. Precaution for LAIV3 does not apply to alcoholism.

b. See Notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations.

c. Hematopoietic stem cell transplant.

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2025

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count		Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End-stage renal disease or on dialysis	Chronic liver disease; alcoholism[a]	Diabetes	Healthcare Personnel[b]
			<15% or <200mm³	≥15% and ≥200mm³							
COVID-19		See Notes									
Influenza inactivated Influenza recombinant		Solid organ transplant See Notes	1 dose annually								
LAIV3					1 dose annually if age 19–49 years		1 dose annually if age 19–49 years				
RSV	Seasonal administration (See Notes)	See Notes				See Notes			Liver disease (See Notes)	See Notes	
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	*										
VAR	*		See Notes								
RZV		See Notes									
HPV	*	3 dose series if indicated									
Pneumococcal											
HepA											
Hep B	See Notes									Age ≥ 60 years	
MenACWY											
MenB											
Hib		HSCT: 3 doses[c]				Asplenia: 1 dose					
Mpox	See Notes				See Notes						See Notes
IPV		Complete 3-dose series if incompletely vaccinated. Self-report of previous doses acceptable (See Notes)									

Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity

Not recommended for all adults, but recommended for some adults based on either age **OR** increased risk for or severe outcomes from disease

Recommended vaccination based on shared clinical decision-making

Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.

Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction

Contraindicated or not recommended
*Vaccinate after pregnancy, if indicated

No Guidance / Not Applicable

a. Precaution for LAIV3 does not apply to alcoholism.

b. See Notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations.

c. Hematopoietic stem cell transplant.

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2025

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count		Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End–stage renal disease or on dialysis	Chronic liver disease; alcoholism[a]	Diabetes	Healthcare Personnel[b]
			<15% or <200mm³	≥15% and ≥200mm³							
COVID–19		See Notes									
Influenza inactivated Influenza recombinant		Solid organ transplant See Notes	1 dose annually								
LAIV3					1 dose annually if age 19–49 years		1 dose annually if age 19–49 years				
RSV	Seasonal administration (See Notes)	See Notes				See Notes			Liver disease (See Notes)	See Notes	
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	*										
VAR	*			See Notes							
RZV		See Notes									
HPV	*	3 dose series if indicated									
Pneumococcal											
HepA											
Hep B	See Notes									Age ≥ 60 years	
MenACWY											
MenB											
Hib		HSCT: 3 doses[c]				Asplenia: 1 dose					
Mpox	See Notes				See Notes						See Notes
IPV		Complete 3–dose series if incompletely vaccinated. Self–report of previous doses acceptable (See Notes)									

Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity

Not recommended for all adults, but recommended for some adults based on either age **OR** increased risk for or severe outcomes from disease

Recommended vaccination based on shared clinical decision–making

Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.

Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction

Contraindicated or not recommended
*Vaccinate after pregnancy, if indicated

No Guidance/ Not Applicable

a. Precaution for LAIV3 does not apply to alcoholism.

b. See Notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations.

c. Hematopoietic stem cell transplant.

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2025

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count: <15% or <200mm³	HIV infection CD4 percentage and count: ≥15% and ≥200mm³	Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End-stage renal disease or on dialysis	Chronic liver disease; alcoholism[a]	Diabetes	Healthcare Personnel[b]
COVID-19		See Notes									
Influenza inactivated Influenza recombinant		Solid organ transplant See Notes	1 dose annually								
LAIV3					1 dose annually if age 19–49 years		1 dose annually if age 19–49 years				
RSV	Seasonal administration (See Notes)	See Notes				See Notes			Liver disease (See Notes)	See Notes	
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	*										
VAR	*			See Notes							
RZV		See Notes									
HPV	*	3 dose series if indicated									
Pneumococcal											
HepA											
Hep B	See Notes									Age ≥ 60 years	
MenACWY											
MenB											
Hib		HSCT: 3 doses[c]				Asplenia: 1 dose					
Mpox	See Notes				See Notes						See Notes
IPV		Complete 3-dose series if incompletely vaccinated. Self-report of previous doses acceptable (See Notes)									

Recommended for all adults who lack documentation of vaccination, **OR** lack evidence of immunity

Not recommended for all adults, but recommended for some adults based on either age **OR** increased risk for or severe outcomes from disease

Recommended vaccination based on shared clinical decision-making

Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.

Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction

Contraindicated or not recommended *Vaccinate after pregnancy, if indicated

No Guidance/ Not Applicable

a. Precaution for LAIV3 does not apply to alcoholism.

b. See Notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations.

c. Hematopoietic stem cell transplant.

Notes

Notes Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Routine vaccination

Persons **NOT** moderately or severely immunocompromised

- Outlines vaccination series by COVID-19 vaccination history.

minimum age or interval are considered valid. Doses of any vaccine administered ≥5 days earlier than the minimum age or minimum interval should not be counted as valid and should be repeated. **The repeat dose should be spaced after the invalid dose by the recommended minimum interval.** For further details, see Table 3–2, Recommended and minimum ages and intervals between vaccine doses, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.

- Information on travel vaccination requirements and recommendations is available at www.cdc.gov/travel/.
- For vaccination of persons with immunodeficiencies, see Table 8–1, Vaccination of persons with primary and secondary immunodeficiencies, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html
- For information about vaccination in the setting of a vaccine–preventable disease outbreak, contact your state or local health department.
- The National Vaccine Injury Compensation Program (VICP) is a no–fault alternative to the traditional legal system for resolving vaccine injury claims. All vaccines included in the adult immunization schedule except PPSV23, RSV, RZV, Mpox, and COVID–19 vaccines are covered by the National Vaccine Injury Compensation Program (VICP). Mpox and COVID–19 vaccines are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see www.hrsa.gov/vaccinecompensation or www.hrsa.gov/cicp.

COVID–19 vaccination

Routine vaccination

- **Unvaccinated:**
  - 1 dose of 2024–25 Moderna or Pfizer–BioNTech
  - 2–dose series of 24–2025 Novavax at 0, 3–8 weeks
- **Previous vaccination:**
  - **1 or more doses of any Moderna or Pfizer–BioNTech or 2 or more doses any Novavax *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
  - **1 dose of any Novavax (dose 1):** 1 dose 2024–25 Novavax COVID–19 vaccine 3–8 weeks after dose 1. More than 8 weeks after dose 1, any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) may be administered.
  - **1 or more doses any Moderna or Pfizer–BioNTech or 2 or more doses any Novavax *including* 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Pfizer–BioNTech or Novavax):** no further doses indicated.
  - **1 or more doses of Janssen COVID–19 Vaccine *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
- **Age 65 years or older:** administer an additional dose (dose 2) 6 months after dose 1 (minimum interval 2 months). If unvaccinated and receiving Novavax, administer 2-dose series as initial vaccination series, then dose 3 at least 6 months (minimum interval 2 months) after dose 2 using any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech).

Special situations

*Persons who are moderately or se immunocompromised.** All vacc should be from the same manufa*

- **Unvaccinated**
  - 3–dose series of 2024–25 Mo least 4 weeks after dose 2
  - 3–dose series of 2024–25 Pfizer–BioNTech at 0, 3 weeks, at least 4 weeks after dose 2
  - 2–dose series of 2024–25 Novavax at 0, 3 weeks
- **Previous vaccination with Moderna**
  - **1 dose of any Moderna (dose 1):** 2 doses of 2024–25 Moderna separated by at least 4 weeks (minimum interval dose 1 to dose 2: 4 weeks)
  - **2 doses of any Moderna:** 1 dose of 2024–25 Moderna at least 4 weeks after the most recent dose.
- **Previous vaccination with Pfizer–BioNTech**
  - **1 dose of any Pfizer–BioNTech (dose 1):** 2 doses of 2024–25 Pfizer–BioNTech separated by at least 4 weeks (minimum interval dose 1 to dose 2: 3 weeks).
  - **2 doses of any Pfizer–BioNTech:** 1 dose of 2024–25 Pfizer–BioNTech at least 4 weeks after the most recent dose.
- **Previous vaccination with 3 or more doses of any Moderna or 3 or more doses of any Pfizer–BioNTech**
  - ***Not including* at least 1 dose of 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
  - ***Including* at least 1 dose of 2024–25 COVID–19 vaccine:** may administer additional doses with Moderna or Pfizer–BioNTech or Novavax.

Special situations

Persons who **ARE** moderately or severely immunocompromised

- Outlines vaccination series by COVID-19 vaccination history.

Notes

Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

For vaccination recommendations for persons ages 18 years or younger, see the Recommended Child and Adolescent Immunization Schedule, 2025: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html

Additional Information

- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as "through."
- Vaccine doses administered ≤4 days before the minimum age or interval are considered valid. Doses of any vaccine administered ≥5 days earlier than the minimum age or minimum interval should not be counted as valid and should be repeated. **The repeat dose should be spaced after the invalid dose by the recommended minimum interval.** For further details, see Table 3–2, Recommended and minimum ages and intervals between vaccine doses, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccination requirements and recommendations is available at www.cdc.gov/travel/.
- For vaccination of persons with immunodeficiencies, see Table 8–1, Vaccination of persons with primary and secondary immunodeficiencies, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html
- For information about vaccination in the setting of a vaccine–preventable disease outbreak, contact your state or local health department.
- The National Vaccine Injury Compensation Program (VICP) is a no–fault alternative to the traditional legal system for resolving vaccine injury claims. All vaccines included in the adult immunization schedule except PPSV23, RSV, RZV, Mpox, and COVID–19 vaccines are covered by the National Vaccine Injury Compensation Program (VICP). Mpox and COVID–19 vaccines are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see www.hrsa.gov/vaccinecompensation or www.hrsa.gov/cicp.

COVID–19 vaccination

Routine vaccination

- **Unvaccinated:**
  - 1 dose of 2024–25 Moderna or Pfizer–BioNTech
  - 2–dose series of 24–2025 Novavax at 0, 3–8 weeks
- **Previous vaccination:**
  - **1 or more doses of any Moderna or Pfizer–BioNTech or 2 or more doses any Novavax *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
  - **1 dose of any Novavax (dose 1):** 1 dose 2024–25 Novavax COVID–19 vaccine 3–8 weeks after dose 1. More than 8 weeks after dose 1, any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) may be administered.
  - **1 or more doses any Moderna or Pfizer–BioNTech or 2 or more doses any Novavax *including* 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Pfizer–BioNTech or Novavax):** no further doses indicated.
  - **1 or more doses of Janssen COVID–19 Vaccine *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
- **Age 65 years or older:** administer an additional dose (dose 2) 6 months after dose 1 (minimum interval 2 months). If unvaccinated and receiving Novavax, administer 2-dose series as initial vaccination series, then dose 3 at least 6 months (minimum interval 2 months) after dose 2 using any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech).

Special situations

*Persons who are moderately or severely immunocompromised.** All vaccine doses in initial series should be from the same manufacturer.*

- **Unvaccinated**
  - 3–dose series of 2024–25 Moderna at 0, 4 weeks, at least 4 weeks after dose 2
  - 3–dose series of 2024–25 Pfizer–BioNTech at 0, 3 weeks, at least 4 weeks after dose 2
  - 2–dose series of 2024–25 Novavax at 0, 3 weeks
- **Previous vaccination with Moderna**
  - **1 dose of any Moderna (dose 1):** 2 doses of 2024–25 Moderna separated by at least 4 weeks (minimum interval dose 1 to dose 2: 4 weeks)
  - **2 doses of any Moderna:** 1 dose of 2024–25 Moderna at least 4 weeks after the most recent dose.
- **Previous vaccination with Pfizer–BioNTech**
  - **1 dose of any Pfizer–BioNTech (dose 1):** 2 doses of 2024–25 Pfizer–BioNTech separated by at least 4 weeks (minimum interval dose 1 to dose 2: 3 weeks).
  - **2 doses of any Pfizer–BioNTech:** 1 dose of 2024–25 Pfizer–BioNTech at least 4 weeks after the most recent dose.
- **Previous vaccination with 3 or more doses of any Moderna or 3 or more doses of any Pfizer–BioNTech**
  - ***Not including* at least 1 dose of 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
  - ***Including* at least 1 dose of 2024–25 COVID–19 vaccine:** may administer additional doses with Moderna or Pfizer–BioNTech or Novavax.

Notes — Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

For vaccination recommendations for persons ages 18 years or younger, see the Recommended Child and Adolescent Immunization Schedule, 2025: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html

Additional Information

- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as "through."
- Vaccine doses administered ≤4 days before the minimum age or interval are considered valid. Doses of any vaccine administered ≥5 days earlier than the minimum age or minimum interval should not be counted as valid and should be repeated. **The repeat dose should be spaced after the invalid dose by the recommended minimum interval.** For further details, see Table 3–2, Recommended and minimum ages and intervals between vaccine doses, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccination requirements and recommendations is available at www.cdc.gov/travel/.
- For vaccination of persons with immunodeficiencies, see Table 8–1, Vaccination of persons with primary and secondary immunodeficiencies, in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html
- For information about vaccination in the setting of a vaccine–preventable disease outbreak, contact your state or local health department.
- The National Vaccine Injury Compensation Program (VICP) is a no–fault alternative to the traditional legal system for resolving vaccine injury claims. All vaccines included in the adult immunization schedule except PPSV23, RSV, RZV, Mpox, and COVID–19 vaccines are covered by the National Vaccine Injury Compensation Program (VICP). Mpox and COVID–19 vaccines are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see www.hrsa.gov/vaccinecompensation or www.hrsa.gov/cicp.

COVID–19 vaccination

Routine vaccination

- **Unvaccinated:**
  - 1 dose of 2024–25 Moderna or Pfizer–BioNTech
  - 2–dose series of 24–2025 Novavax at 0, 3–8 weeks
- **Previous vaccination:**
  - **1 or more doses of any Moderna or Pfizer–BioNTech or 2 or more doses any Novavax *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
  - **1 dose of any Novavax (dose 1):** 1 dose 2024–25 Novavax COVID–19 vaccine 3–8 weeks after dose 1. More than 8 weeks after dose 1, any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) may be administered.
  - **1 or more doses any Moderna or Pfizer–BioNTech or 2 or more doses any Novavax *including* 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Pfizer–BioNTech or Novavax):** no further doses indicated.
  - **1 or more doses of Janssen COVID–19 Vaccine *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
- **Age 65 years or older:** administer an additional dose (dose 2) 6 months after dose 1 (minimum interval 2 months). If unvaccinated and receiving Novavax, administer 2-dose series as initial vaccination series, then dose 3 at least 6 months (minimum interval 2 months) after dose 2 using any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech).

Special situations

*Persons who are moderately or severely immunocompromised.** All vaccine doses in initial series should be from the same manufacturer.*

- **Unvaccinated**
  - 3–dose series of 2024–25 Moderna at 0, 4 weeks, at least 4 weeks after dose 2
  - 3–dose series of 2024–25 Pfizer–BioNTech at 0, 3 weeks, at least 4 weeks after dose 2
  - 2–dose series of 2024–25 Novavax at 0, 3 weeks
- **Previous vaccination with Moderna**
  - **1 dose of any Moderna (dose 1):** 2 doses of 2024–25 Moderna separated by at least 4 weeks (minimum interval dose 1 to dose 2: 4 weeks)
  - **2 doses of any Moderna:** 1 dose of 2024–25 Moderna at least 4 weeks after the most recent dose.
- **Previous vaccination with Pfizer–BioNTech**
  - **1 dose of any Pfizer–BioNTech (dose 1):** 2 doses of 2024–25 Pfizer–BioNTech separated by at least 4 weeks (minimum interval dose 1 to dose 2: 3 weeks).
  - **2 doses of any Pfizer–BioNTech:** 1 dose of 2024–25 Pfizer–BioNTech at least 4 weeks after the most recent dose.
- **Previous vaccination with 3 or more doses of any Moderna or 3 or more doses of any Pfizer–BioNTech**
  - ***Not including* at least 1 dose of 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.
  - ***Including* at least 1 dose of 2024–25 COVID–19 vaccine:** may administer additional doses with Moderna or Pfizer–BioNTech or Novavax.

Notes

Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

COVID-19 vaccination - *continued*

- **Previous vaccination with Novavax**
  - **1 dose of any Novavax (dose 1):** 1 dose 2024–25 Novavax COVID–19 vaccine 3 weeks after Dose 1
  - **2 or more doses any Novavax *not including* 2024–25 Novavax:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Pfizer–BioNTech or Novavax) at least 8 weeks after the most recent dose.
  - **2 or more doses of Novavax *including* at least 1 dose 2024–25 Novavax:** may administer additional doses with Moderna or Pfizer–BioNTech or Novavax.
- **Previous vaccination with Janssen**
  - **1 or more doses of Janssen COVID–19 Vaccine *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.

****Additional doses of 2024-25 COVID-19 vaccine for moderately or severely immunocompromised:** if unvaccinated or completing initial vaccination series, after completing initial vaccination series, administer an additional dose of any 2024-25 COVID-19 vaccine (Moderna or Novavax or Pfizer–BioNTech) 6 months later (minimum interval 2 months). For persons who have completed an initial vaccination series, administer an additional dose of any 2024–25 COVID-19 vaccine 6 months after the most recent dose (minimum interval 2 months). Recommendation for further additional doses is based on shared clinical decision-making and should be administered at least 2 months after the most recent dose.

Unvaccinated persons have never received any COVID–19 vaccine doses. There is no preferential recommendation for the use of one COVID–19 vaccine over another when more than one recommended age–appropriate vaccine is available.

For information about interchangeability of COVID–19 vaccines, see www.cdc.gov/vaccines/covid–19/clinical–considerations/interim–considerations–us.html#Interchangeability.

Current COVID–19 vaccine information available at www.cdc.gov/covidschedule. For information on Emergency Use Authorization (EUA) indications for COVID–19 vaccines, see www.fda.gov/emergencypreparedness–and–response/coronavirus–disease–2019–covid–19/covid–19–vaccines.

Special situations

- **Anatomical or functional asplenia (including sickle cell disease):** 1 dose if previously did not receive Hib vaccine.
  - **Elective splenectomy:** 1 dose preferably at least 14 days before splenectomy.
- **Hematopoietic stem cell transplant (HSCT):** 3–dose series 4 weeks apart starting 6–12 months after successful transplant, regardless of Hib vaccination history.

Hepatitis A vaccination

Routine vaccination

Any person who is not fully vaccinated and requests vaccination (identification of risk factor not required): complete 2–dose series HepA (Havrix 6–12 months apart or Vaqta 6–18 months apart [minimum interval: 6 months]) or 3–dose series HepA–HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

Special situations

Any person who is not fully vaccinated and who is at risk for hepatitis A virus infection or severe disease from hepatitis A virus infection include: complete 2–dose series HepA or 3–dose series HepA–HepB as above. Risk factors include:

- **Chronic liver disease** (e.g., persons with hepatitis B, hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
- **HIV infection**
- **Men who have sex with men**
- **Injection or noninjection drug use**
- **Persons experiencing homelessness**
- **Work with hepatitis A virus** in research laboratory or with nonhuman primates with hepatitis A virus infection
- **Travel in countries with high or intermediate endemic hepatitis A:** HepA–HepB (Twinrix) may be administered on an accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- **Close, personal contact with international adoptee** (e.g., household or regular babysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A: dose 1 as soon as adoption is planned; preferably at least 2 weeks before adoptee's arrival.

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COVID-19 vaccination - *continued*

- **Previous vaccination with Novavax**
  - **1 dose of any Novavax (dose 1):** 1 dose 2024–25 Novavax COVID–19 vaccine 3 weeks after Dose 1
  - **2 or more doses any Novavax *not including* 2024–25 Novavax:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Pfizer–BioNTech or Novavax) at least 8 weeks after the most recent dose.
  - **2 or more doses of Novavax *including* at least 1 dose 2024–25 Novavax:** may administer additional doses with Moderna or Pfizer–BioNTech or Novavax.
- **Previous vaccination with Janssen**
  - **1 or more doses of Janssen COVID–19 Vaccine *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose

****Additional doses of 2024-25 COVID-19 vaccine for moderately or severely immunocompromised:** if unvaccinated or completing initial vaccination series, after completing initial vaccination series, administer an additional dose of any 2024-25 COVID-19 vaccine (Moderna or Novavax or Pfizer–BioNTech) 6 months later (minimum interval 2 months). For persons who have completed an initial vaccination series, administer an additional dose of any 2024–25 COVID-19 vaccine 6 months after the most recent dose (minimum interval 2 months). Recommendation for further additional doses is based on shared clinical decision-making and should be administered at least 2 months after the most recent dose.

Unvaccinated persons have never received any COVID–19 vaccine doses. There is no preferential recommendation for the use of one COVID–19 vaccine over another when more than one recommended age–appropriate vaccine is available.

For information about interchangeability of COVID–19 vaccines, see www.cdc.gov/vaccines/covid–19/clinical–considerations/interim–considerations–us.html#Interchangeability

Current COVID–19 vaccine information available at www.cdc.gov/covidschedule. For information on Emergency Use Authorization (EUA) indications for COVID–19 vaccines, see www.fda.gov/emergencypreparedness–and–response/coronavirus–disease–2019–covid–19/covid–19–vaccines.

Special situations

- **Anatomical or functional asplenia (including sickle cell disease):** 1 dose if previously did not receive Hib vaccine.
  - **Elective splenectomy:** 1 dose preferably at least 14 days before splenectomy.
- **Hematopoietic stem cell transplant (HSCT):** 3–dose series 4 weeks apart starting 6–12 months after successful transplant, regardless of Hib vaccination history.

Hepatitis A vaccination

Routine vaccination

Any person who is not fully vaccinated and requests vaccination (identification of risk factor not required): complete 2–dose series HepA (Havrix 6–12 months apart or Vaqta 6–18 months apart [minimum interval: 6 months]) or 3–dose series HepA–HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

Special situations

Any person who is not fully vaccinated and who is at risk for hepatitis A virus infection or severe disease from hepatitis A virus infection include: complete 2–dose series HepA or 3–dose series HepA–HepB as above. Risk factors include:

- **Chronic liver disease** (e.g., persons with hepatitis B, hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
- **HIV infection**
- **Men who have sex with men**
- **Injection or noninjection drug use**
- **Persons experiencing homelessness**
- **Work with hepatitis A virus** in research laboratory or with nonhuman primates with hepatitis A virus infection
- **Travel in countries with high or intermediate endemic hepatitis A:** HepA–HepB (Twinrix) may be administered on an accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- **Close, personal contact with international adoptee** (e.g., household or regular babysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A: dose 1 as soon as adoption is planned; preferably at least 2 weeks before adoptee's arrival.

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Notes

Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

COVID-19 vaccination - *continued*

- **Previous vaccination with Novavax**
  - **1 dose of any Novavax (dose 1):** 1 dose 2024–25 Novavax COVID–19 vaccine 3 weeks after Dose 1
  - **2 or more doses any Novavax *not including* 2024–25 Novavax:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Pfizer–BioNTech or Novavax) at least 8 weeks after the most recent dose.
  - **2 or more doses of Novavax *including* at least 1 dose 2024–25 Novavax:** may administer additional doses with Moderna or Pfizer–BioNTech or Novavax.
- **Previous vaccination with Janssen**
  - **1 or more doses of Janssen COVID–19 Vaccine *not including* 1 dose of any 2024–25 COVID–19 vaccine:** 1 dose of any 2024–25 COVID–19 vaccine (Moderna or Novavax or Pfizer–BioNTech) at least 8 weeks after the most recent dose.

****Additional doses of 2024-25 COVID-19 vaccine for moderately or severely immunocompromised:** if unvaccinated or completing initial vaccination series, after completing initial vaccination series, administer an additional dose of any 2024-25 COVID-19 vaccine (Moderna or Novavax or Pfizer–BioNTech) 6 months later (minimum interval 2 months). For persons who have completed an initial vaccination series, administer an additional dose of any 2024–25 COVID-19 vaccine 6 months after the most recent dose (minimum interval 2 months). Recommendation for further additional doses is based on shared clinical decision-making and should be administered at least 2 months after the most recent dose.

Unvaccinated persons have never received any COVID–19 vaccine doses. There is no preferential recommendation for the use of one COVID–19 vaccine over another when more than one recommended age–appropriate vaccine is available.

For information about interchangeability of COVID–19 vaccines, see www.cdc.gov/vaccines/covid–19/clinical–considerations/interim–considerations–us.html#Interchangeability

Current COVID–19 vaccine information available at www.cdc.gov/covidschedule. For information on Emergency Use Authorization (EUA) indications for COVID–19 vaccines, see www.fda.gov/emergencypreparedness–and–response/coronavirus–disease–2019–covid–19/covid–19–vaccines.

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Hepatitis A vaccination

outine vaccination

Any person who is not fully vaccinated and requests vaccination (identification of risk factor not required): complete 2–dose series HepA (Havrix 6–12 months apart or Vaqta 6–18 months apart [minimum interval: 6 months]) or 3–dose series HepA–HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

pecial situations

Any person who is not fully vaccinated and who is at risk for hepatitis A virus infection or severe disease from hepatitis A virus infection include: complete 2–dose series HepA or 3–dose series HepA–HepB as above. Risk factors include:

- **Chronic liver disease** (e.g., persons with hepatitis B, hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
- **HIV infection**
- **Men who have sex with men**
- **Injection or noninjection drug use**
- **Persons experiencing homelessness**
- **Work with hepatitis A virus** in research laboratory or with nonhuman primates with hepatitis A virus infection
- **Travel in countries with high or intermediate endemic hepatitis A:** HepA–HepB (Twinrix) may be administered on an accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- **Close, personal contact with international adoptee** (e.g., household or regular babysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A: dose 1 as soon as adoption is planned; preferably at least 2 weeks before adoptee's arrival.

Special situations

- **Anatomical or functional asplenia (including sickle cell disease):** 1 dose if previously did not receive Hib vaccine.
  - **Elective splenectomy:** 1 dose preferably at least 14 days before splenectomy.
- **Hematopoietic stem cell transplant (HSCT):** 3–dose series 4 weeks apart starting 6–12 months after successful transplant, regardless of Hib vaccination history.

Notes

Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Hepatitis B vaccination

Routine vaccination

- **Age 19 through 59 years:** complete a 2– or 3– or 4–dose series
  - 2–dose series only applies when 2 doses of Heplisav–B* are used at least 4 weeks apart
  - 3–dose series Engerix–B, PreHevbrio*, or Recombivax HB at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks]
  - 3–dose series HepA–HepB (Twinrix) at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months]
  - 4–dose series HepA–HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months

***Note:** Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data in pregnant persons.

- **Age 60 years or older without** known risk factors for hepatitis B virus infection **may** receive a HepB vaccine series.
- **Age 60 years or older with** known risk factors for hepatitis B virus infection **should** receive a HepB vaccine series.
- **Any adult age 60 years of age or older** who requests HepB vaccination should receive a HepB vaccine series.
  - **Risk factors for hepatitis B virus infection include:**
    - **Chronic liver disease** e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase (ALT) or aspartate aminotransferase (AST) level greater than twice the upper limit of normal
    - **HIV infection**
    - **Sexual exposure risk** e.g., sex partners of hepatitis B surface antigen (HBsAg)–positive persons, sexually active persons not in mutually monogamous relationships, persons seeking evaluation or treatment for a sexually transmitted infection, men who have sex with men
    - **Current or recent injection drug use**
    - **Percutaneous or mucosal risk for exposure to blood** e.g., household contacts of HBsAg–positive persons, residents and staff of facilities for developmentally disabled persons, health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood–contaminated body fluids; persons on maintenance dialysis (including in–center or home hemodialysis and peritoneal dialysis), persons who are predialysis, and patients with diabetes*
    - **Incarceration**
    - **Travel in countries with high or intermediate endemic hepatitis B**

***Age 60 years or older with diabetes:** Based on shared clinical decision making, 2–, 3–, or 4–dose series as above.

Special situations

- **Patients on dialysis:** complete a 3– or 4–dose series
  - 3–dose series Recombivax HB at 0, 1, 6 months (Note: Use Dialysis Formulation 1 mL = 40 mcg)
  - 4–dose series Engerix–B at 0, 1, 2, and 6 months (Note: Use 2 mL dose instead of the normal adult dose of 1 mL)
- **Age 20 years or older with an immunocompromising condition:** complete a 2– or 3– or 4–dose series.
  - 3–dose series Recombivax HB at 0,1, 6 months (Note: Use Dialysis Formulation 1ml = 40 mcg)
  - 4 dose series Engerix–B at 0,1,2, and 6 months (Note: Use 2mL dose instead of the normal adult dose of 1mL)
  - 2 dose series Heplisav–B* at 0, 1 months
  - 3 dose series PreHevbrio* at 0,1, 6 months

Human papillomavirus vaccination

Routine vaccination

- **All persons up through age 26 years:** complete 2– or 3–dose series depending on age at initial vaccination or condition
  - **Age 9–14 years at initial vaccination and received 1 dose or 2 doses less than 5 months apart:** 1 additional dose
  - **Age 9–14 years at initial vaccination and received 2 doses at least 5 months apart:** HPV vaccination series complete, no additional dose needed
  - **Age 15 years or older at initial vaccination:** 3–dose series at 0, 1–2 months, 6 months (minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 12 weeks / dose 1 to dose 3: 5 months; repeat dose if administered too soon)
- No additional dose recommended when any HPV vaccine series of any valency has been completed using the recommended dosing intervals.

Shared clinical decision–making

- **Adults age 27–45 years:** Based on shared clinical decision–making, complete a 2–dose series (if initiated age 9–14 years) or 3–dose series (if initiated ≥15 years)

For additional information on shared clinical decision–making for HPV; see www.cdc.gov/vaccines/hcp/admin/downloads/isd–job–aid–scdm–hpv–shared–clinical–decision–making–hpv.pdf

Special situations

- **Age ranges recommended above for routine and catch–up vaccination or shared clinical decision–making also apply in special situations**
  - **Immunocompromising conditions, including HIV infection:** complete 3–dose series, even for those who initiate vaccination at age 9 through 14 years.
  - **Pregnancy:** Pregnancy testing is not needed before vaccination. HPV vaccination is not recommended until after pregnancy. No intervention needed if inadvertently vaccinated while pregnant.

Notes Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Hepatitis B vaccination

Routine vaccination

- **Age 19 through 59 years:** complete a 2– or 3– or 4–dose series
  - 2–dose series only applies when 2 doses of Heplisav–B* are used at least 4 weeks apart
  - 3–dose series Engerix–B, PreHevbrio*, or Recombivax HB at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks]
  - 3–dose series HepA–HepB (Twinrix) at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months]
  - 4–dose series HepA–HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months

~~***Note:** Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data in pregnant persons.~~

- **Age 60 years or older without** known risk factors for hepatitis B virus infection **may** receive a HepB vaccine series.
- **Age 60 years or older with** known risk factors for hepatitis B virus infection **should** receive a HepB vaccine series.
- **Any adult age 60 years of age or older** who requests HepB vaccination should receive a HepB vaccine series.
  - **Risk factors for hepatitis B virus infection include:**
    - **Chronic liver disease** e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase (ALT) or aspartate aminotransferase (AST) level greater than twice the upper limit of normal
    - **HIV infection**
    - **Sexual exposure risk** e.g., sex partners of hepatitis B surface antigen (HBsAg)–positive persons, sexually active persons not in mutually monogamous relationships, persons seeking evaluation or treatment for a sexually transmitted infection, men who have sex with men
    - **Current or recent injection drug use**
    - **Percutaneous or mucosal risk for exposure to blood** e.g., household contacts of HBsAg–positive persons, residents and staff of facilities for developmentally disabled persons, health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood–contaminated body
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***Note:** Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data in pregnant persons.

***Age 60** shared c as above.

Special situations

- **Patients on dialysis:** complete a 3– or 4–dose series
  - 3–dose series Recombivax HB at 0, 1, 6 months (Note: Use Dialysis Formulation 1 mL = 40 mcg)
  - 4–dose series Engerix–B at 0, 1, 2, and 6 months (Note: Use 2 mL dose instead of the normal adult dose of 1 mL)
- **Age 20 years or older with an immunocompromising condition:** complete a 2– or 3– or 4–dose series.
  - 3–dose series Recombivax HB at 0,1, 6 months (Note: Use Dialysis Formulation 1ml = 40 mcg)
  - 4 dose series Engerix–B at 0,1,2, and 6 months (Note: Use 2mL dose instead of the normal adult dose of 1mL)
  - 2 dose series Heplisav–B* at 0, 1 months
  - 3 dose series PreHevbrio* at 0,1, 6 months

Human papillomavirus vaccination

Routine vaccination

- **All persons up through age 26 years:** complete 2– or 3–dose series depending on age at initial vaccination or condition
  - **Age 9–14 years at initial vaccination and received 1 dose or 2 doses less than 5 months apart:** 1 additional dose
  - **Age 9–14 years at initial vaccination and received 2 doses at least 5 months apart:** HPV vaccination series complete, no additional dose needed
  - **Age 15 years or older at initial vaccination:** 3–dose series at 0, 1–2 months, 6 months (minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: ths; repeat dose if

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hared clinical se series (if initiated initiated ≥15 years)

For additional information on shared clinical decision–making for HPV; see www.cdc.gov/vaccines/hcp/admin/downloads/isd–job–aid–scdm–hpv–shared–clinical–decision–making–hpv.pdf

Special situations

- **Age ranges recommended above for routine and catch–up vaccination or shared clinical decision–making also apply in special situations**
  - **Immunocompromising conditions, including HIV infection:** complete 3–dose series, even for those who initiate vaccination at age 9 through 14 years.
  - **Pregnancy:** Pregnancy testing is not needed before vaccination. HPV vaccination is not recommended until after pregnancy. No intervention needed if inadvertently vaccinated while pregnant.

Notes

Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Influenza vaccination

Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Solid organ transplant recipients aged 19 through 64 years receiving immunosuppressive medications:** high–dose inactivated (HD–IIV3) and adjuvanted inactivated (aIIV3) influenza vaccines are acceptable options. No preference over other age–appropriate IIV3 or RIV3.
  - **Age 65 years or older:** Any one of high–dose inactivated influenza vaccine (HD–IIV3), recombinant influenza vaccine (RIV3), or adjuvanted inactivated influenza vaccine (aIIV3) is preferred. If none of these three vaccines is available, then any other age–appropriate influenza vaccine should be used.
- For the 2024–25 season, see www.cdc.gov/mmwr/volumes/73/rr/rr7305a1.htm
- For the 2025–26 season, see the 2025–26 ACIP influenza vaccine recommendations.

Special situations

- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** should not receive LAIV3. If LAIV3 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.

Note: Persons with an egg allergy can receive any influenza vaccine (egg–based and non–egg based) appropriate for age and health status.

Measles, mumps, and rubella vaccination

Routine vaccination

- **No evidence of immunity to measles, mumps, or rubella:** 1 dose
  - **Evidence of immunity:** Born before 1957 (except for health care personnel, see below), documentation of receipt of MMR vaccine, laboratory evidence of immunity or disease (diagnosis of disease without laboratory confirmation is not evidence of immunity)

Special situations

- **Pregnancy with no evidence of immunity to rubella:** MMR contraindicated during pregnancy; after pregnancy (before discharge from health care facility); 1 dose
- **Nonpregnant persons of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 percentages ≥15% and CD4 count ≥200 cells/mm³ for at least 6 months and no evidence of immunity to measles, mumps, or rubella:** complete 2–dose series at least 4 weeks apart; MMR contraindicated for HIV infection with CD4 percentage <15% or CD4 count <200 cells/mm³
- **Severe immunocompromising conditions:** MMR contraindicated
- **Students in postsecondary educational institutions, international travelers, and household or close, personal contacts of immunocompromised persons with no evidence of immunity to measles, mumps, or rubella:** complete 2–dose series at least 4 weeks apart if previously did not receive any doses of MMR or 1 dose if previously received 1 dose MMR
- **In mumps outbreak settings,** for information about additional doses of MMR (including 3rd dose of MMR), see www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm
- **Health care personnel:**
  - **Born before 1957 with no evidence of immunity to measles, mumps, or rubella:** Consider 2–dose series at least 4 weeks apart for protection against measles or mumps or 1 dose for protection against rubella
  - **Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella:** complete 2–dose series at least 4 weeks apart for protection against measles or mumps or at least 1 dose for protection against rubella

Meningococcal vaccination

Special situations for MenACWY

- **Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:** 2–dose primary series Menveo or MenQuadfi at least 8 weeks apart; 1 booster dose 5 years after primary series and every 5 years if risk remains.
- **Travel in countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to *Neisseria meningitidis*:** 1 dose Menveo or MenQuadfi; 1 booster dose 5 years after primary series and every 5 years if risk remains.
- **First–year college students who live in residential housing (if not previously vaccinated at age 16 years or older) or military recruits:** 1 dose Menveo or MenQuadfi.

For MenACWY recommendations **in outbreak setting** (e.g., in community or organizational settings, or among men who have sex with men) and **additional meningococcal vaccination** information, see www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm

Shared clinical decision–making for MenB

- **Adolescents and young adults age 16–23 years (age 16–18 years preferred) not at increased risk for meningococcal disease*:** based on shared clinical decision–making

- **Bexsero or Trumenba (use same brand for all doses): 2–dose series** at least 6 months apart (if dose 2 is administered earlier than 6 months, administer a 3rd dose at least 4 months after dose 2)

*Students with less than 6 months prior to college entry may receive 3-dose series (0, 1–2, 6 months) to optimize rapid protection.

For additional information on shared clinical decision–making for MenB, see www.cdc.gov/vaccines/hcp/admin/downloads/isd–job–aid–scdm–mening–b–shared–clinical–decision–making.pdf

Special situations for MenB

- **Anatomical or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use, or microbiologists routinely exposed to *Neisseria meningitidis*:**
  - **Bexsero or Trumenba (use same brand for all doses including booster doses).** 3–dose primary series at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed; if dose 3 is administered earlier than 4 months after dose 2, a 4th dose should be administered at least 4 months after dose 3).
  - **Booster doses:** 1 booster dose one year after primary series and every 2–3 years if risk remains.
- **Pregnancy:** Delay MenB until after pregnancy due to lack of safety data in pregnant persons. May administer if at increased risk and vaccination benefits outweigh potential risks.

For MenB recommendations **in outbreak setting** (e.g., in community or organizational settings, or among men who have sex with men) and **additional meningococcal vaccination** information, see ww.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm.

Note: MenB vaccines may be administered simultaneously with MenACWY vaccines if indicated, but at a different anatomic site, if feasible.

Adults may receive a single dose of Penbraya (MenACWY–TT/MenB–FHbp) as an alternative to separate administration of MenACWY and MenB when both vaccines would be given on the same clinic day. For adults not at increased risk, if Penbraya is used for dose 1 MenB, MenB–FHbp (Trumenba) should be administered for dose 2 MenB. For adults at increased risk of meningococcal disease, Penbraya may be used for additional MenACWY and MenB doses (including booster doses) if both would be given on the same clinic day **and** at least 6 months have elapsed since most recent Penbraya dose.

Mpox vaccination

Special situations

- **Any person at risk for Mpox infection:** complete 2–dose series, 28 days apart.

  Risk factors for Mpox infection include:
  - Persons who are gay, bisexual, and other MSM, transgender or nonbinary people who in the past 6 months have had:
    - A new diagnosis of at least 1 sexually transmitted disease
    - More than 1 sex partner
    - Sex at a commercial sex venue
    - Sex in association with a large public event in a geographic area where Mpox transmission is occurring
  - Persons who are sexual partners of the persons described above
  - Persons who anticipate experiencing any of the situations described above
- **Pregnancy:** There is currently no ACIP recommendation for Jynneos use in pregnancy due to lack of safety data in pregnant persons. Pregnant persons with any risk factor described above may receive Jynneos.
- **Healthcare personnel:** Vaccination is not routinely recommended specifically for healthcare personnel due to occupational risk in the workplace.

For detailed information, see: www.cdc.gov/mpox/hcp/vaccine–considerations/vaccination–overview.html?CDC_AAref_Val=https://www.cdc.gov/poxvirus/mpox/interim–considerations/overview.html

Meningococcal vaccination

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- **Travel in countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to *Neisseria meningitidis*:** 1 dose Menveo or MenQuadfi; 1 booster dose 5 years after primary series and every 5 years if risk remains.
- **First–year college students who live in residential housing (if not previously vaccinated at age 16 years or older) or military recruits:** 1 dose Menveo or MenQuadfi.

For MenACWY recommendations **in outbreak setting** (e.g., in community or organizational settings, or among men who have sex with men) and **additional meningococcal vaccination** information, see www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm

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For additional information on shared clinical decision–making for MenB, see www.cdc.gov/vaccines/hcp/admin/downloads/isd–job–aid–scdm–mening–b–shared–clinical–decision–making.pdf

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- **Pregnancy:** There is currently no ACIP recommendation for Jynneos use in pregnancy due to lack of safety data in pregnant persons. Pregnant persons with any risk factor described above may receive Jynneos.
- **Healthcare personnel:** Vaccination is not routinely recommended specifically for healthcare personnel due to occupational risk in the workplace.

For detailed information, see: www.cdc.gov/mpox/hcp/vaccine–considerations/vaccination–overview. html?CDC_AAref_Val=https://www.cdc.gov/poxvirus/mpox/interim–considerations/overview.html

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For detailed information, see: www.cdc.gov/mpox/hcp/vaccine–considerations/vaccination–overview.html?CDC_AAref_Val=https://www.cdc.gov/poxvirus/mpox/interim–considerations/overview.html

Notes — Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Pneumococcal vaccination

Routine vaccination

- **Age 50 years or older who have:**
  - **Not previously received a dose of PCV13, PCV15, PCV20, or PCV21 or whose previous vaccination history is unknown:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21.
    - If PCV15 is used, administer 1 dose PPSV23 at least 1 year after the PCV15 dose (may use minimum interval of 8 weeks for adults with an immunocompromising condition,* cochlear implant, or cerebrospinal fluid leak).
  - **Previously received only PCV7:** follow the recommendation above.
  - **Previously received only PCV13:** 1 dose PCV20 or 1 dose PCV21at least 1 year after the last PCV13 dose.
  - **Previously received only PPSV23:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21. Administer either PCV15 or PCV20 or PCV21 at least 1 year after the last PPSV23 dose.
    - If PCV15 is used, no additional PPSV23 doses are recommended.
  - **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 or 1 dose PCV21 or 1 dose PPSV23.
    - If PCV20 or PCV21 is selected, administer at least 5 years after the last pneumococcal vaccine dose. - If PPSV23 is selected, see dosing schedule at https://www.cdc.gov/pneumococcal/downloads/vaccine-timing-adults-jobaid.pdf?CDC_AAref_ Val=https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf.
  - **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 or 1 dose of PCV21 at least 5 years after the last pneumococcal vaccine dose.

Special situations

- **Age 19–49 years with certain underlying medical conditions or other risk factors** who have:**
  - **Not previously received a PCV13, PCV15, PCV20, or PCV21 or whose previous vaccination history is unknown:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21.
    - If PCV15 is used, administer 1 dose PPSV23 at least 1 year after the PCV15 dose (may use minimum interval of 8 weeks for adults with an immunocompromising condition,* cochlear implant, or cerebrospinal fluid leak).
  - **Previously received only PCV7:** follow the recommendation above.
  - **Previously received only PCV13:** 1 dose PCV20 or 1 dose PCV21 at least 1 year after the PCV13 dose. **Previously received only PPSV23:** 1 dose PCV15 or 1 dose PCV20 or PCV21. Administer either PCV15 or PCV20 or PCV21 at least 1 year after the last PPSV23 dose.
    - If PCV15 is used, no additional PPSV23 doses are recommended.
- **Previously received PCV13 and 1 dose of PPSV23:** 1 dose PCV20 or 1 dose PCV21 at least 5 years after the last pneumococcal vaccine dose.

Adults aged 19 years and older who have received PCV20 or PCV21: no additional pneumococcal vaccine dose recommended.

- **Pregnancy:** no recommendation for PCV or PPSV23 due to limited data. Summary of existing data on pneumococcal vaccination during pregnancy can be found at www.cdc.gov/mmwr/volumes/72/rr/rr7203a1.html.
- **PPSV23 not available:** adults aged 19 years or older who received PCV15 but have not yet completed PPSV23 series, can complete the series with either 1 dose of PCV20 or 1 dose of PCV21 if they no longer have access to PPSV23.

For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: www.cdc.gov/pneumococcal/hcp/vaccine-recommendations/app.html?CDC_AAref_Val=https://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html.

***Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiencies, iatrogenic immunosuppression, generalized malignancy, HIV infection, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplant, congenital or acquired asplenia, or sickle cell disease or other hemoglobinopathies.

****Note:** Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, chronic renal failure, cigarette smoking, cochlear implant, congenital or acquired asplenia, CSF leak, diabetes mellitus, generalized malignancy, HIV infection, Hodgkin disease, immunodeficiencies, iatrogenic immunosuppression, leukemia, lymphoma, multiple myeloma, nephrotic syndrome, solid organ transplant, or sickle cell disease or other hemoglobinopathies.

Pneumococcal vaccination

Routine vaccination

- **Age 50 years or older who have:**
  - **Not previously received a dose of PCV13, PCV15, PCV20, or PCV21 or whose previous vaccination history is unknown:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21.
    - If PCV15 is used, administer 1 dose PPSV23 at least 1 year after the PCV15 dose (may use minimum interval of 8 weeks for adults with an immunocompromising condition,* cochlear implant, or cerebrospinal fluid leak).
  - **Previously received only PCV7:** follow the recommendation above.
  - **Previously received only PCV13:** 1 dose PCV20 or 1 dose PCV21at least 1 year after the last PCV13 dose.
  - **Previously received only PPSV23:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21. Administer either PCV15 or PCV20 or PCV21 at least 1 year after the last PPSV23 dose.
    - If PCV15 is used, no additional PPSV23 doses are recommended.
  - **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 or 1 dose PCV21 or 1 dose PPSV23.
    - If PCV20 or PCV21 is selected, administer at least 5 years after the last pneumococcal vaccine dose. - If PPSV23 is selected, see dosing schedule at https://www.cdc.gov/pneumococcal/downloads/vaccine-timing-adults-jobaid.pdf?CDC_AAref_ Val=https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf.
  - **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 or 1 dose of PCV21 at least 5 years after the last pneumococcal vaccine dose.

Special situations

- **Age 19–49 years with certain underlying medical conditions or other risk factors** who have:**
  - **Not previously received a PCV13, PCV15, PCV20, or PCV21 or whose previous vaccination history is unknown:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21.
    - If PCV15 is used, administer 1 dose PPSV23 at least 1 year after the PCV15 dose (may use minimum interval of 8 weeks for adults with an immunocompromising condition,* cochlear implant, or cerebrospinal fluid leak).
  - **Previously received only PCV7:** follow the recommendation above.
  - **Previously received only PCV13:** 1 dose PCV20 or 1 dose PCV21 at least 1 year after the PCV13 dose.
  - **Previously received only PPSV23:** 1 dose PCV15 or 1 dose PCV20 or PCV21. Administer either PCV15 or PCV20 or PCV21 at least 1 year after the last PPSV23 dose.
    - If PCV15 is used, no additional PPSV23 doses are recommended.
- **Previously received PCV13 and 1 dose of PPSV23:** 1 dose PCV20 or 1 dose PCV21 at least 5 years after the last pneumococcal vaccine dose.

Adults aged 19 years and older who have received PCV20 or PCV21: no additional pneumococcal vaccine dose recommended.

- **Pregnancy:** no recommendation for PCV or PPSV23 due to limited data. Summary of existing data on pneumococcal vaccination during pregnancy can be found at www.cdc.gov/mmwr/volumes/72/rr/rr7203a1.html.
- **PPSV23 not available:** adults aged 19 years or older who received PCV15 but have not yet completed PPSV23 series, can complete the series with either 1 dose of PCV20 or 1 dose of PCV21 if they no longer have access to PPSV23.

For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: www.cdc.gov/pneumococcal/hcp/vaccine-recommendations/app.html?CDC_AAref_Val=https://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html.

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****Note:** Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, chronic renal failure, cigarette smoking, cochlear implant, congenital or acquired asplenia, CSF leak, diabetes mellitus, generalized malignancy, HIV infection, Hodgkin disease, immunodeficiencies, iatrogenic immunosuppression, leukemia, lymphoma, multiple myeloma, nephrotic syndrome, solid organ transplant, or sickle cell disease or other hemoglobinopathies.

Notes — Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Pneumococcal vaccination

Routine vaccination

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    - If PCV15 is used, administer 1 dose PPSV23 at least 1 year after the PCV15 dose (may use minimum interval of 8 weeks for adults with an immunocompromising condition,* cochlear implant, or cerebrospinal fluid leak).
  - **Previously received only PCV7:** follow the recommendation above.
  - **Previously received only PCV13:** 1 dose PCV20 or 1 dose PCV21at least 1 year after the last PCV13 dose.
  - **Previously received only PPSV23:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21. Administer either PCV15 or PCV20 or PCV21 at least 1 year after the last PPSV23 dose.
    - If PCV15 is used, no additional PPSV23 doses are recommended.
  - **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 or 1 dose PCV21 or 1 dose PPSV23.
    - If PCV20 or PCV21 is selected, administer at least 5 years after the last pneumococcal vaccine dose. - If PPSV23 is selected, see dosing schedule at https://www.cdc.gov/pneumococcal/downloads/vaccine-timing-adults-jobaid.pdf?CDC_AAref_ Val=https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf.
  - **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 or 1 dose of PCV21 at least 5 years after the last pneumococcal vaccine dose.

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    - If PCV15 is used, administer 1 dose PPSV23 at least 1 year after the PCV15 dose (may use minimum interval of 8 weeks for adults with an immunocompromising condition,* cochlear implant, or cerebrospinal fluid leak).
  - **Previously received only PCV7:** follow the recommendation above.
  - **Previously received only PCV13:** 1 dose PCV20 or 1 dose PCV21at least 1 year after the last PCV13 dose.
  - **Previously received only PPSV23:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21. Administer either PCV15 or PCV20 or PCV21 at least 1 year after the last PPSV23 dose.
    - If PCV15 is used, no additional PPSV23 doses are recommended.
  - **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 or 1 dose PCV21 or 1 dose PPSV23.
    - If PCV20 or PCV21 is selected, administer at least 5 years after the last pneumococcal vaccine dose. - If PPSV23 is selected, see dosing schedule at https://www.cdc.gov/pneumococcal/downloads/vaccine-timing-adults-jobaid.pdf?CDC_AAref_ Val=https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf.
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 or 1 dose of PCV21 at least 5 years after the last pneumococcal vaccine dose.

Special situations

- **Age 19–49 years with certain underlying medical conditions or other risk factors** who have:**
  - **Not previously received a PCV13, PCV15, PCV20, or PCV21 or whose previous vaccination history is unknown:** 1 dose PCV15 or 1 dose PCV20 or 1 dose PCV21.
    - If PCV15 is used, administer 1 dose PPSV23 at least 1 year after the PCV15 dose (may use minimum interval of 8 weeks for adults with an immunocompromising condition,* cochlear implant, or cerebrospinal fluid leak).
  - **Previously received only PCV7:** follow the recommendation above.
  - **Previously received only PCV13:** 1 dose PCV20 or 1 dose PCV21 at least 1 year after the PCV13 dose. **Previously received only PPSV23:** 1 dose PCV15 or 1 dose PCV20 or PCV21. Administer either PCV15 or PCV20 or PCV21 at least 1 year after the last PPSV23 dose.
    - If PCV15 is used, no additional PPSV23 doses are recommended.
- **Previously received PCV13 and 1 dose of PPSV23:** 1 dose PCV20 or 1 dose PCV21 at least 5 years after the last pneumococcal vaccine dose.

Adults aged 19 years and older who have received PCV20 or PCV21: no additional pneumococcal vaccine dose recommended.

- **Pregnancy:** no recommendation for PCV or PPSV23 due to limited data. Summary of existing data on pneumococcal vaccination during pregnancy can be found at www.cdc.gov/mmwr/volumes/72/rr/rr7203a1.html.
- **PPSV23 not available:** adults aged 19 years or older who received PCV15 but have not yet completed PPSV23 series, can complete the series with either 1 dose of PCV20 or 1 dose of PCV21 if they no longer have access to PPSV23.

For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: www.cdc.gov/pneumococcal/hcp/vaccine-recommendations/app.html?CDC_AAref_Val=https://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html.

***Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiencies, iatrogenic immunosuppression, generalized malignancy, HIV infection, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplant, congenital or acquired asplenia, or sickle cell disease or other hemoglobinopathies.

****Note:** Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, chronic renal failure, cigarette smoking, cochlear implant, congenital or acquired asplenia, CSF leak, diabetes mellitus, generalized malignancy, HIV infection, Hodgkin disease, immunodeficiencies, iatrogenic immunosuppression, leukemia, lymphoma, multiple myeloma, nephrotic syndrome, solid organ transplant, or sickle cell disease or other hemoglobinopathies.

Notes

Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Poliovirus vaccination

Routine vaccination

- **Adults known or suspected to be unvaccinated or incompletely vaccinated:** administer remaining doses (1, 2, or 3 IPV doses) to complete a 3–dose primary series.* Unless there are specific reasons to believe they were not vaccinated, most adults who were born and raised in the United States can assume they were vaccinated against polio as children.

Special situations

- **Adults at increased risk for exposure to poliovirus who completed primary series*:** may administer one lifetime IPV booster

***Note:** Complete primary series consists of at least 3 doses of IPV or trivalent oral poliovirus vaccine (tOPV) in any combination.

For detailed information, see: www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html

RSV vaccination

Routine vaccination

- **Pregnant persons of any age**
  - **Pregnant at 32 weeks 0 days through 36 weeks and 6 days gestation from September through January in most of the continental United States*:** 1 dose **Abrysvo**. Administer RSV vaccine regardless of previous RSV infection.
  - Either maternal RSV vaccination with Abrysvo or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent severe respiratory syncytial virus disease in infants.
  - **All other pregnant persons:** RSV vaccine not recommended.
  - **Subsequent pregnancies:** additional doses not recommended. No data are available to inform whether additional doses are needed in subsequent pregnancies. Infants born to pregnant persons who received RSV vaccine during a previous pregnancy should receive nirsevimab.

***Note:** Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdictions with tropical climate) should follow guidance from public health authorities on timing of administration. Refer to the 2025 Child and Adolescent Immunization Schedule for considerations regarding nirsevimab administration to infants.

- **Age 75 years or older**
  - **Unvaccinated:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Special situations

- **Age 60–74 years:**
  - **Unvaccinated and at increased risk of severe RSV disease**:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Persons 60 years and older can get RSV vaccine at any time but best to administer in late summer and early fall before RSV spreads in communities—ideally August through October in most of continental United States. For further guidance, see www.cdc.gov/mmwr/volumes/73/wr/mm7332e1.htm?s_cid=mm7332e1_w

****Note:** ***People can self–attest to the presence of a risk factor.*** **The following medical and other conditions increase the risk of severe RSV disease:** chronic cardiovascular disease (e.g., heart failure, coronary artery disease, congenital heart disease [excluding isolated hypertension]); chronic lung or respiratory disease (e.g., chronic obstructive pulmonary disease, emphysema, asthma, interstitial lung disease, cystic fibrosis); end stage renal disease or dependence on hemodialysis or other renal replacement therapy; diabetes mellitus complicated by chronic kidney disease, neuropathy, retinopathy, or other end–organ damage; diabetes mellitus requiring treatment with insulin or sodium–glucose cotransporter 2 (SGLT2) inhibitor; neurologic or neuromuscular conditions causing impaired airway clearance or respiratory muscle weakness (e.g., post–stroke dysphagia, amyotrophic lateral sclerosis, muscular dystrophy [excluding history of stroke without impaired airway clearance]); chronic liver disease (e.g., cirrhosis); chronic hematologic conditions (e.g., sickle cell disease, thalassemia); severe obesity (body mass index ≥ 40 kg/m2); moderate or severe immune compromise; residence in a nursing home; and other chronic medical conditions or risk factors that a health care provider determines would increase the risk of severe disease due to viral respiratory infection (e.g., frailty, concern for presence of undiagnosed chronic medical conditions, residence in a remote or rural community where escalation of medical care is challenging).

Poliovirus vaccination

Routine vaccination

- **Adults known or suspected to be unvaccinated or incompletely vaccinated:** administer remaining doses (1, 2, or 3 IPV doses) to complete a 3–dose primary series.* Unless there are specific reasons to believe they were not vaccinated, most adults who were born and raised in the United States can assume they were vaccinated against polio as children.

Special situations

- **Adults at increased risk for exposure to poliovirus who completed primary series*:** may administer one lifetime IPV booster

***Note:** Complete primary series consists of at least 3 doses of IPV or trivalent oral poliovirus vaccine (tOPV) in any combination.

For detailed information, see: www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html

RSV vaccination

Routine vaccination

- **Pregnant persons of any age**
  - **Pregnant at 32 weeks 0 days through 36 weeks and 6 days gestation from September through January in most of the continental United States*:** 1 dose **Abrysvo**. Administer RSV vaccine regardless of previous RSV infection.
  - Either maternal RSV vaccination with Abrysvo or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent severe respiratory syncytial virus disease in infants.
  - **All other pregnant persons:** RSV vaccine not recommended.
  - **Subsequent pregnancies:** additional doses not recommended. No data are available to inform whether additional doses are needed in subsequent pregnancies. Infants born to pregnant persons who received RSV vaccine during a previous pregnancy should receive nirsevimab.

***Note:** Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdictions with tropical climate) should follow guidance from public health authorities on timing of administration. Refer to the 2025 Child and Adolescent Immunization Schedule for considerations regarding nirsevimab administration to infants.

- **Age 75 years or older**
  - **Unvaccinated:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Special situations

- **Age 60–74 years:**
  - **Unvaccinated and at increased risk of severe RSV disease**:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Persons 60 years and older can get RSV vaccine at any time but best to administer in late summer and early fall before RSV spreads in communities—ideally August through October in most of continental United States. For further guidance, see www.cdc.gov/mmwr/volumes/73/wr/mm7332e1.htm?s_cid=mm7332e1_w

****Note:** ***People can self–attest to the presence of a risk factor.*** **The following medical and other conditions increase the risk of severe RSV disease:** chronic cardiovascular disease (e.g., heart failure, coronary artery disease, congenital heart disease [excluding isolated hypertension]); chronic lung or respiratory disease (e.g., chronic obstructive pulmonary disease, emphysema, asthma, interstitial lung disease, cystic fibrosis); end stage renal disease or dependence on hemodialysis or other renal replacement therapy; diabetes mellitus complicated by chronic kidney disease, neuropathy, retinopathy, or other end–organ damage; diabetes mellitus requiring treatment with insulin or sodium–glucose cotransporter 2 (SGLT2) inhibitor; neurologic or neuromuscular conditions causing impaired airway clearance or respiratory muscle weakness (e.g., post–stroke dysphagia, amyotrophic lateral sclerosis, muscular dystrophy [excluding history of stroke without impaired airway clearance]); chronic liver disease (e.g., cirrhosis); chronic hematologic conditions (e.g., sickle cell disease, thalassemia); severe obesity (body mass index ≥ 40 kg/m2); moderate or severe immune compromise; residence in a nursing home; and other chronic medical conditions or risk factors that a health care provider determines would increase the risk of severe disease due to viral respiratory infection (e.g., frailty, concern for presence of undiagnosed chronic medical conditions, residence in a remote or rural community where escalation of medical care is challenging).

Poliovirus vaccination

Routine vaccination

- **Adults known or suspected to be unvaccinated or incompletely vaccinated:** administer remaining doses (1, 2, or 3 IPV doses) to complete a 3–dose primary series.* Unless there are specific reasons to believe they were not vaccinated, most adults who were born and raised in the United States can assume they were vaccinated against polio as children.

Special situations

- **Adults at increased risk for exposure to poliovirus who completed primary series*:** may administer one lifetime IPV booster

***Note:** Complete primary series consists of at least 3 doses of IPV or trivalent oral poliovirus vaccine (tOPV) in any combination.

For detailed information, see: www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html

RSV vaccination

Routine vaccination

- **Pregnant persons of any age**
  - **Pregnant at 32 weeks 0 days through 36 weeks and 6 days gestation from September through January in most of the continental United States*:** 1 dose **Abrysvo**. Administer RSV vaccine regardless of previous RSV infection.
  - Either maternal RSV vaccination with Abrysvo or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent severe respiratory syncytial virus disease in infants.
  - **All other pregnant persons:** RSV vaccine not recommended.
  - **Subsequent pregnancies:** additional doses not recommended. No data are available to inform whether additional doses are needed in subsequent pregnancies. Infants born to pregnant persons who received RSV vaccine during a previous pregnancy should receive nirsevimab.

***Note:** Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdictions with tropical climate) should follow guidance from public health authorities on timing of administration. Refer to the 2025 Child and Adolescent Immunization Schedule for considerations regarding nirsevimab administration to infants.

- **Age 75 years or older**
  - **Unvaccinated:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Special situations

- **Age 60–74 years:**
  - **Unvaccinated and at increased risk of severe RSV disease**:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Persons 60 years and older can get RSV vaccine at any time but best to administer in late summer and early fall before RSV spreads in communities—ideally August through October in most of continental United States. For further guidance, see www.cdc.gov/mmwr/volumes/73/wr/mm7332e1.htm?s_cid=mm7332e1_w

****Note:** ***People can self–attest to the presence of a risk factor.*** **The following medical and other conditions increase the risk of severe RSV disease:** chronic cardiovascular disease (e.g., heart failure, coronary artery disease, congenital heart disease [excluding isolated hypertension]); chronic lung or respiratory disease (e.g., chronic obstructive pulmonary disease, emphysema, asthma, interstitial lung disease, cystic fibrosis); end stage renal disease or dependence on hemodialysis or other renal replacement therapy; diabetes mellitus complicated by chronic kidney disease, neuropathy, retinopathy, or other end–organ damage; diabetes mellitus requiring treatment with insulin or sodium–glucose cotransporter 2 (SGLT2) inhibitor; neurologic or neuromuscular conditions causing impaired airway clearance or respiratory muscle weakness (e.g., post–stroke dysphagia, amyotrophic lateral sclerosis, muscular dystrophy [excluding history of stroke without impaired airway clearance]); chronic liver disease (e.g., cirrhosis); chronic hematologic conditions (e.g., sickle cell disease, thalassemia); severe obesity (body mass index ≥ 40 kg/m2); moderate or severe immune compromise; residence in a nursing home; and other chronic medical conditions or risk factors that a health care provider determines would increase the risk of severe disease due to viral respiratory infection (e.g., frailty, concern for presence of undiagnosed chronic medical conditions, residence in a remote or rural community where escalation of medical care is challenging).

Poliovirus vaccination

Routine vaccination

- **Adults known or suspected to be unvaccinated or incompletely vaccinated:** administer remaining doses (1, 2, or 3 IPV doses) to complete a 3–dose primary series.* Unless there are specific reasons to believe they were not vaccinated, most adults who were born and raised in the United States can assume they were vaccinated against polio as children.

Special situations

- **Adults at increased risk for exposure to poliovirus who completed primary series*:** may administer one lifetime IPV booster

***Note:** Complete primary series consists of at least 3 doses of IPV or trivalent oral poliovirus vaccine (tOPV) in any combination.

For detailed information, see: www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html

RSV vaccination

Routine vaccination

- **Pregnant persons of any age**
  - **Pregnant at 32 weeks 0 days through 36 weeks and 6 days gestation from September through January in most of the continental United States*:** 1 dose **Abrysvo**. Administer RSV vaccine regardless of previous RSV infection.
  - Either maternal RSV vaccination with Abrysvo or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent severe respiratory syncytial virus disease in infants.
  - **All other pregnant persons:** RSV vaccine not recommended.
  - **Subsequent pregnancies:** additional doses not recommended. No data are available to inform whether additional doses are needed in subsequent pregnancies. Infants born to pregnant persons who received RSV vaccine during a previous pregnancy should receive nirsevimab.

***Note:** Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdictions with tropical climate) should follow guidance from public health authorities on timing of administration. Refer to the 2025 Child and Adolescent Immunization Schedule for considerations regarding nirsevimab administration to infants.

- **Age 75 years or older**
  - **Unvaccinated:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Special situations

- **Age 60–74 years:**
  - **Unvaccinated and at increased risk of severe RSV disease**:** 1 dose (Arexvy or Abrysvo or mResvia). Additional doses not recommended.
  - **Previously vaccinated:** additional doses not recommended. No data are available to inform whether additional doses are needed.

Persons 60 years and older can get RSV vaccine at any time but best to administer in late summer and early fall before RSV spreads in communities—ideally August through October in most of continental United States. For further guidance, see www.cdc.gov/mmwr/volumes/73/wr/mm7332e1.htm?s_cid=mm7332e1_w

****Note:** ***People can self–attest to the presence of a risk factor.*** **The following medical and other conditions increase the risk of severe RSV disease:** chronic cardiovascular disease (e.g., heart failure, coronary artery disease, congenital heart disease [excluding isolated hypertension]); chronic lung or respiratory disease (e.g., chronic obstructive pulmonary disease, emphysema, asthma, interstitial lung disease, cystic fibrosis); end stage renal disease or dependence on hemodialysis or other renal replacement therapy; diabetes mellitus complicated by chronic kidney disease, neuropathy, retinopathy, or other end–organ damage; diabetes mellitus requiring treatment with insulin or sodium–glucose cotransporter 2 (SGLT2) inhibitor; neurologic or neuromuscular conditions causing impaired airway clearance or respiratory muscle weakness (e.g., post–stroke dysphagia, amyotrophic lateral sclerosis, muscular dystrophy [excluding history of stroke without impaired airway clearance]); chronic liver disease (e.g., cirrhosis); chronic hematologic conditions (e.g., sickle cell disease, thalassemia); severe obesity (body mass index ≥ 40 kg/m2); moderate or severe immune compromise; residence in a nursing home; and other chronic medical conditions or risk factors that a health care provider determines would increase the risk of severe disease due to viral respiratory infection (e.g., frailty, concern for presence of undiagnosed chronic medical conditions, residence in a remote or rural community where escalation of medical care is challenging).

Notes — Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

- **Completed primary series and received at least 1 dose Tdap at age 10 years or older:** Td or Tdap every 10 years thereafter.
- **Completed primary series and did NOT receive Tdap at age 10 years or older:** 1 dose Tdap, then Td or Tdap every 10 years thereafter.
- **Unvaccinated or incomplete primary vaccination series for tetanus, diphtheria, or pertussis:** administer remaining doses (1,2, or 3 doses) to complete 3–dose primary series. 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks later, and a third dose of Td or Tdap 6–12 months later (Tdap is preferred as first dose and can be substituted for any Td dose), then Td or Tdap every 10 years thereafter.

Special situations

- **Pregnancy:** 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36.
- **Wound management:** Persons with 3 or more doses of tetanus–toxoid–containing vaccine: For clean and minor wounds, administer Tdap or Td if more than 10 years since last dose of tetanus–toxoid–containing vaccine; for all other wounds, administer Tdap or Td if more than 5 years since last dose of tetanus–toxoid–containing vaccine. Tdap is preferred for persons who have not previously received Tdap or whose Tdap history is unknown. If a tetanus–toxoid–containing vaccine is indicated for a pregnant woman, use Tdap. For detailed information, see www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm

Varicella vaccination

outine vaccination

No evidence of immunity to varicella: 2–dose series 4–8 weeks apart if previously did not receive varicella–containing vaccine (VAR or MMRV [measles–mumps–rubella–varicella vaccine] for children); if previously received 1 dose varicella–containing vaccine, 1 dose at least 4 weeks after first dose.

Evidence of immunity: U.S.–born before 1980 (except for pregnant persons and health care personnel [see below]), documentation of 2 doses varicella–containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease.

pecial situations

Pregnancy with no evidence of immunity to varicella: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose if previously received 1 dose varicella–containing vaccine or dose 1 of 2–dose series (dose 2: 4–8 weeks later) if previously did not receive any varicella–containing vaccine, regardless of whether U.S.–born before 1980.

Health care personnel with no evidence of immunity to varicella: 1 dose if previously received 1 dose varicella–containing vaccine; 2–dose series 4–8 weeks apart if previously did not receive any varicella–containing vaccine, regardless of whether U.S.–born before 1980.

HIV infection with CD4 percentages ≥15% and CD4 count ≥200 cells/mm³ with no evidence of immunity: Vaccination may be considered (2 doses 3 months apart); VAR contraindicated for HIV infection with CD4 percentage <15% or CD4 count <200 cells/mm³

Severe immunocompromising conditions: VAR contraindicated.

Zoster vaccination

Routine vaccination

- **Age 50 years or older*:** 2–dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon), regardless of previous herpes zoster or history of zoster vaccine live (ZVL, Zostavax) vaccination.

***Note:** Serologic evidence of prior varicella is not necessary for zoster vaccination. However, if serologic evidence of varicella susceptibility becomes available, providers should follow ACIP guidelines for varicella vaccination first. RZV is not indicated for the prevention of varicella, and there are limited data on the use of RZV in persons without a history of varicella or varicella vaccination.

Special situations

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- **Immunocompromising conditions (including persons with HIV regardless of CD4 count)****: 2–dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see www.cdc.gov/shingles/hcp/vaccine–considerations/immunocompromised–adults.html

****Note:** If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged ≥19 years and the ACIP varicella vaccine recommendations for further guidance: www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm

Appendix

Contraindications and precautions

Appendix Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Vaccine	Contraindicated or Not Recommended[1]	Precautions[2]
Haemophilus influenzae type b (Hib)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness with or without fever
Hepatitis A (HepA)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including neomycin	• Moderate or severe acute illness with or without fever
Hepatitis B (HepB)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including yeast • *Pregnancy: PreHevbrio is not recommended due to lack of safety data in pregnant persons. Use other hepatitis B vaccines if HepB is indicated*[4]	• Moderate or severe acute illness with or without fever
Hepatitis A–Hepatitis B vaccine (HepA–HepB) [Twinrix]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including neomycin and yeast	• Moderate or severe acute illness with or without fever
Human papillomavirus (HPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • *Pregnancy: HPV vaccination not recommended*	• Moderate or severe acute illness with or without fever
Measles, mumps, rubella (MMR)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) • Pregnancy • Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent	• Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing • Moderate or severe acute illness with or without fever
Meningococcal ACWY (MenACWY) (MenACWY-CRM) [Menveo] (MenACWY-TT) [MenQuadfi]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • For MenACWY-CRM only: severe allergic reaction to any diphtheria toxoid–or CRM197–containing vaccine • For MenACWY-TT only: severe allergic reaction to a tetanus toxoid–containing vaccine	• Moderate or severe acute illness with or without fever
Meningococcal B (MenB) MenB-4C [Bexsero] MenB-FHbp [Trumenba]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Pregnancy • For MenB-4C only: Latex sensitivity • Moderate or severe acute illness with or without fever
Meningococcal ABCWY (MenACWY-TT/MenB-FHbp) [Penbraya]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe allergic reaction to a tetanus toxoid–containing vaccine	• Moderate or severe acute illness, with or without fever
Mpox [Jynneos]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness, with or without fever
Pneumococcal conjugate (PCV15, PCV20, PCV21)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe allergic reaction (e.g., anaphylaxis) to any diphtheria–toxoid–containing vaccine or to its vaccine component[3]	• Moderate or severe acute illness with or without fever
Pneumococcal polysaccharide (PPSV23)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness with or without fever
Poliovirus vaccine, inactivated (IPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Pregnancy • Moderate or severe acute illness with or without fever
Respiratory syncytial virus vaccine (RSV)	• Severe allergic reaction (e.g., anaphylaxis) to a vaccine component	• Moderate or severe acute illness with or without fever
Tetanus, diphtheria, and acellular pertussis (Tdap) Tetanus, diphtheria (Td)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • For Tdap only: Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP, DTaP, or Tdap	• Guillain–Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus–toxoid–containing vaccine • History of Arthus–type hypersensitivity reactions after a previous dose of diphtheria–toxoid– containing or tetanus–toxoid–containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus–toxoid–containing vaccine • Moderate or severe acute illness with or without fever • For Tdap only: Progressive or unstable neurological disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized
Varicella (VAR)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) • Pregnancy • Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent	• Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) • Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination) • Use of aspirin or aspirin-containing products • Moderate or severe acute illness with or without fever
Zoster recombinant vaccine (RZV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness with or without fever • Current episode of herpes zoster

1. When a contraindication is present, a vaccine should NOT be administered. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html
2. When a precaution is present, vaccination should generally be deferred but might be indicated if the benefit of protection from the vaccine outweighs the risk for an adverse reaction. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html
3. Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. Package inserts for U.S.-licensed vaccines are available at www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states.
4. For information on the pregnancy exposure registries for persons who were inadvertently vaccinated with PreHevbrio while pregnant, please visit www.prehevbrio.com/#safety.

Appendix Recommended Adult Immunization Schedule for Ages 19 Years or Older, United States, 2025

Vaccine	Contraindicated or Not Recommended[1]	Precautions[2]
Haemophilus influenzae type b (Hib)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	
Hepatitis A (HepA)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including neomycin	
Hepatitis B (HepB)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including yeast • ~~Pregnancy: Heplisav-B and PreHevbrio are not recommended due to lack of safety data in pregnant persons. Use other hepatitis B vaccines if HepB is indicated~~[4]	
Hepatitis A–Hepatitis B vaccine (HepA–HepB) [Twinrix]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] including neomycin and yea	
Human papillomavirus (HPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • *Pregnancy: HPV vaccination not recommended*	
Measles, mumps, rubella (MMR)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) • Pregnancy • Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent	• Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing • Moderate or severe acute illness with or without fever
Meningococcal ACWY (MenACWY) (MenACWY–CRM) [Menveo] (MenACWY–TT) [MenQuadfi]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • For MenACWY–CRM only: severe allergic reaction to any diphtheria toxoid– or CRM197–containing vaccine • For MenACWY–TT only: severe allergic reaction to a tetanus toxoid–containing vaccine	• Moderate or severe acute illness with or without fever
Meningococcal B (MenB) MenB–4C [Bexsero] MenB–FHbp [Trumenba]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Pregnancy • For MenB–4C only: Latex sensitivity • Moderate or severe acute illness with or without fever
Meningococcal ABCWY (MenACWY–TT/MenB–FHbp) [Penbraya]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe allergic reaction to a tetanus toxoid–containing vaccine	• Moderate or severe acute illness, with or without fever
Mpox [Jynneos]	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness, with or without fever
Pneumococcal conjugate (PCV15, PCV20, PCV21)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe allergic reaction (e.g., anaphylaxis) to any diphtheria–toxoid–containing vaccine or to its vaccine component[3]	• Moderate or severe acute illness with or without fever
Pneumococcal polysaccharide (PPSV23)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness with or without fever
Poliovirus vaccine, inactivated (IPV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Pregnancy • Moderate or severe acute illness with or without fever
Respiratory syncytial virus vaccine (RSV)	• Severe allergic reaction (e.g., anaphylaxis) to a vaccine component	• Moderate or severe acute illness with or without fever
Tetanus, diphtheria, and acellular pertussis (Tdap) Tetanus, diphtheria (Td)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • For Tdap only: Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP, DTaP, or Tdap	• Guillain–Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus–toxoid–containing vaccine • History of Arthus–type hypersensitivity reactions after a previous dose of diphtheria–toxoid– containing or tetanus–toxoid–containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus–toxoid–containing vaccine • Moderate or severe acute illness with or without fever • For Tdap only: Progressive or unstable neurological disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized
Varicella (VAR)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3] • Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) • Pregnancy • Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent	• Recent (≤11 months) receipt of antibody–containing blood product (specific interval depends on product) • Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination) • Use of aspirin or aspirin–containing products • Moderate or severe acute illness with or without fever
Zoster recombinant vaccine (RZV)	• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component[3]	• Moderate or severe acute illness with or without fever • Current episode of herpes zoster

Delete

Pregnancy: Heplisav-B and PreHevbrio are not recommended due to lack of safety data in pregnant persons. Use other hepatitis B vaccines if HepB is indicated.

1. When a contraindication is present, a vaccine should NOT be administered. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html
2. When a precaution is present, vaccination should generally be deferred but might be indicated if the benefit of protection from the vaccine outweighs the risk for an adverse reaction. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html
3. Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. Package inserts for U.S.-licensed vaccines are available at www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states.
4. ~~For information on the pregnancy exposure registries for persons who were inadvertently vaccinated with PreHevbrio while pregnant, please visit www.prehevbrio.com/#safety.~~

Thank you!
Questions?

For more information, contact CDC/ATSDR
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov www.atsdr.cdc.gov

Backup slides

Use of Hepatitis B vaccine during pregnancy(1)

- **On September 11, 2024, the FDA announced its approval for a labeling change for Heplisav-B stating that there is now safety data for its use among pregnant persons.**

- **CDC has an update regarding this labeling change in clearance for publication in MMWR.**
  - Update recommends, *Providers can now vaccinate pregnant persons needing HepB vaccination with Engerix-B, Recombivax HB, Twinrix, or Heplisav-B.*

Use of Hepatitis B vaccine during pregnancy(2)

- **Prior to September 2024, neither Heplisav-B nor PreHevbrio had sufficient safety data among pregnant persons to meet FDA requirements for update to their standardized package inserts.**
  - 8.1 Pregnancy

    Risk Summary

    All pregnancies have a risk of birth defect, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively.

    Data

    Human Data: Determination that rates of miscarriage and birth defects are not above background.

    Animal Data: Data from developmental toxicity studies if they exist.

Use of Hepatitis B vaccine during pregnancy(3)

- **Recommendations for vaccination of pregnant persons is addressed in the 2018 MMWR: *Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices.***
  - Guideline lists and describes all vaccines recommended for use in the United States but makes NO preferential recommendation for use of any particular vaccine.