

# Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger

UNITED STATES  
2024

## Vaccines and Other Immunizing Agents in the Child and Adolescent Immunization Schedule\*

Monoclonal antibody	Abbreviation(s)	Trade name(s)
Respiratory syncytial virus monoclonal antibody (Nirsevimab)	RSV-mAb	Beyfortus™
Vaccine	Abbreviation(s)	Trade name(s)
COVID-19	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine
	1vCOV-aPS	Spikevax®/Moderna COVID-19 Vaccine Novavax COVID-19 Vaccine
Dengue vaccine	DEN4CYD	Dengvaxia®
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel® Infanrix®
<i>Haemophilus influenzae</i> type b vaccine	Hib (PRP-T)	ActHIB® Hiberix®
	Hib (PRP-OMP)	PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis B vaccine	HepB	Engerix-B® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	Multiple
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II® Priorix®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-CRM	Menveo®
	MenACWY-TT	MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C	Bexsero®
	MenB-FHbp	Trumenba®
Meningococcal serogroup A, B, C, W, Y vaccine	MenACWY-TT/ MenB-FHbp	Penbraya™
Mpox vaccine	Mpox	Jynneos®
Pneumococcal conjugate vaccine	PCV15	Vaxneuvance™
	PCV20	Prevnar 20®
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23®
Poliovirus vaccine (inactivated)	IPV	Ipol®
Respiratory syncytial virus vaccine	RSV	Abrysvo™
Rotavirus vaccine	RV1	Rotarix®
	RV5	RotaTeq®
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Tetanus and diphtheria vaccine	Td	Tenivac® Tdvax™
Varicella vaccine	VAR	Varivax®
Combination vaccines (use combination vaccines instead of separate injections when appropriate)		
DTaP, hepatitis B, and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix®
DTaP, inactivated poliovirus, and <i>Haemophilus influenzae</i> type b vaccine	DTaP-IPV/Hib	Pentacel®
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Kinrix®
		Quadracel®
DTaP, inactivated poliovirus, <i>Haemophilus influenzae</i> type b, and hepatitis B vaccine	DTaP-IPV-Hib-HepB	Vaxelis®
Measles, mumps, rubella, and varicella vaccine	MMRV	ProQuad®

\*Administer recommended vaccines if immunization history is incomplete or unknown. Do not restart or add doses to vaccine series for extended intervals between doses. When a vaccine is not administered at the recommended age, administer at a subsequent visit. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

## How to use the child and adolescent immunization schedule

<h3>1</h3> <p>Determine recommended vaccine by age (<b>Table 1</b>)</p>	<h3>2</h3> <p>Determine recommended interval for catch-up vaccination (<b>Table 2</b>)</p>	<h3>3</h3> <p>Assess need for additional recommended vaccines by medical condition or other indication (<b>Table 3</b>)</p>	<h3>4</h3> <p>Review vaccine types, frequencies, intervals, and considerations for special situations (<b>Notes</b>)</p>	<h3>5</h3> <p>Review contraindications and precautions for vaccine types (<b>Appendix</b>)</p>	<h3>6</h3> <p>Review new or updated ACIP guidance (<b>Addendum</b>)</p>
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Recommended by the Advisory Committee on Immunization Practices ([www.cdc.gov/vaccines/acip](http://www.cdc.gov/vaccines/acip)) and approved by the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)), American Academy of Pediatrics ([www.aap.org](http://www.aap.org)), American Academy of Family Physicians ([www.aafp.org](http://www.aafp.org)), American College of Obstetricians and Gynecologists ([www.acog.org](http://www.acog.org)), American College of Nurse-Midwives ([www.midwife.org](http://www.midwife.org)), American Academy of Physician Associates ([www.aapa.org](http://www.aapa.org)), and National Association of Pediatric Nurse Practitioners ([www.napnap.org](http://www.napnap.org)).

### Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to your state or local health department
- Clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) at [www.vaers.hhs.gov](http://www.vaers.hhs.gov) or 800-822-7967

### Questions or comments

Contact [www.cdc.gov/cdc-info](http://www.cdc.gov/cdc-info) or 800-CDC-INFO (800-232-4636), in English or Spanish, 8 a.m.–8 p.m. ET, Monday through Friday, excluding holidays



Download the CDC Vaccine Schedules app for providers at [www.cdc.gov/vaccines/schedules/hcp/schedule-app.html](http://www.cdc.gov/vaccines/schedules/hcp/schedule-app.html)

### Helpful information

- Complete Advisory Committee on Immunization Practices (ACIP) recommendations: [www.cdc.gov/vaccines/hcp/acip-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/index.html)
- ACIP Shared Clinical Decision-Making Recommendations: [www.cdc.gov/vaccines/acip/acip-scdm-faqs.html](http://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html)
- *General Best Practice Guidelines for Immunization* (including contraindications and precautions): [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html)
- Vaccine information statements: [www.cdc.gov/vaccines/hcp/vis/index.html](http://www.cdc.gov/vaccines/hcp/vis/index.html)
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): [www.cdc.gov/vaccines/pubs/surv-manual](http://www.cdc.gov/vaccines/pubs/surv-manual)

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U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

# Table 1 Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

**These recommendations must be read with the notes that follow.** For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars. To determine minimum intervals between doses, see the catch-up schedule (Table 2).

Vaccine and other immunizing agents	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2–3 yrs	4–6 yrs	7–10 yrs	11–12 yrs	13–15 yrs	16 yrs	17–18 yrs				
Respiratory syncytial virus (RSV-mAb [Nirsevimab])	1 dose depending on maternal RSV vaccination status, See Notes					1 dose (8 through 19 months), See Notes															
Hepatitis B (HepB)	1 <sup>st</sup> dose	← 2 <sup>nd</sup> dose →		← 3 <sup>rd</sup> dose →																	
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See Notes																
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	← 4 <sup>th</sup> dose →				5 <sup>th</sup> dose											
Haemophilus influenzae type b (Hib)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See Notes	← 3 <sup>rd</sup> or 4 <sup>th</sup> dose, See Notes →															
Pneumococcal conjugate (PCV15, PCV20)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	← 4 <sup>th</sup> dose →															
Inactivated poliovirus (IPV <18 yrs)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	← 3 <sup>rd</sup> dose →							4 <sup>th</sup> dose									
COVID-19 (1vCOV-mRNA, 1vCOV-aPS)						1 or more doses of updated (2023–2024 Formula) vaccine (See Notes)															
Influenza (IIV4)						Annual vaccination 1 or 2 doses										Annual vaccination 1 dose only					
<b>OR</b>											Annual vaccination 1 or 2 doses		<b>OR</b>						Annual vaccination 1 dose only		
Influenza (LAIV4)																					
Measles, mumps, rubella (MMR)					See Notes		← 1 <sup>st</sup> dose →				2 <sup>nd</sup> dose										
Varicella (VAR)						← 1 <sup>st</sup> dose →				2 <sup>nd</sup> dose											
Hepatitis A (HepA)					See Notes		2-dose series, See Notes														
Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)													1 dose								
Human papillomavirus (HPV)													See Notes								
Meningococcal (MenACWY-CRM ≥2 mos, MenACWY-TT ≥2years)			See Notes													1 <sup>st</sup> dose			2 <sup>nd</sup> dose		
Meningococcal B (MenB-4C, MenB-FHbp)																		See Notes			
Respiratory syncytial virus vaccine (RSV [Abrysvo])																		Seasonal administration during pregnancy, See Notes			
Dengue (DEN4CYD; 9-16 yrs)																		Seropositive in endemic dengue areas (See Notes)			
Mpox																					

Range of recommended ages for all children
  Range of recommended ages for catch-up vaccination
  Range of recommended ages for certain high-risk groups
  Recommended vaccination can begin in this age group
  Recommended vaccination based on shared clinical decision-making
  No recommendation/not applicable

# Table 2 Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More than 1 Month Behind, United States, 2024

The table below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. **Always use this table in conjunction with Table 1 and the Notes that follow.**

Children age 4 months through 6 years					
Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Hepatitis B	Birth	<b>4 weeks</b>	<b>8 weeks and at least 16 weeks after first dose</b> minimum age for the final dose is 24 weeks		
Rotavirus	6 weeks Maximum age for first dose is 14 weeks, 6 days.	<b>4 weeks</b>	<b>4 weeks</b> maximum age for final dose is 8 months, 0 days		
Diphtheria, tetanus, and acellular pertussis	6 weeks	<b>4 weeks</b>	<b>4 weeks</b>	<b>6 months</b>	<b>6 months</b> A fifth dose is not necessary if the fourth dose was administered at age 4 years or older <b>and</b> at least 6 months after dose 3
<i>Haemophilus influenzae</i> type b	6 weeks	<b>No further doses needed</b> if first dose was administered at age 15 months or older. <b>4 weeks</b> if first dose was administered before the 1 <sup>st</sup> birthday. <b>8 weeks (as final dose)</b> if first dose was administered at age 12 through 14 months.	<b>No further doses needed</b> if previous dose was administered at age 15 months or older <b>4 weeks</b> if current age is younger than 12 months <b>and</b> first dose was administered at younger than age 7 months <b>and</b> at least 1 previous dose was PRP-T (ActHib®, Pentacel®, Hiberix®), Vaxelis® or unknown <b>8 weeks and age 12 through 59 months (as final dose)</b> if current age is younger than 12 months <b>and</b> first dose was administered at age 7 through 11 months; <b>OR</b> if current age is 12 through 59 months <b>and</b> first dose was administered before the 1 <sup>st</sup> birthday <b>and</b> second dose was administered at younger than 15 months; <b>OR</b> if both doses were Pedvax-HIB® and were administered before the 1st birthday	<b>8 weeks (as final dose)</b> This dose only necessary for children age 12 through 59 months who received 3 doses before the 1 <sup>st</sup> birthday.	
Pneumococcal conjugate	6 weeks	<b>No further doses needed</b> for healthy children if first dose was administered at age 24 months or older <b>4 weeks</b> if first dose was administered before the 1 <sup>st</sup> birthday <b>8 weeks (as final dose for healthy children)</b> if first dose was administered at the 1 <sup>st</sup> birthday or after	<b>No further doses needed</b> for healthy children if previous dose was administered at age 24 months or older <b>4 weeks</b> if current age is younger than 12 months <b>and</b> previous dose was administered at <7 months old <b>8 weeks (as final dose for healthy children)</b> if previous dose was administered between 7–11 months (wait until at least 12 months old); <b>OR</b> if current age is 12 months or older <b>and</b> at least 1 dose was administered before age 12 months	<b>8 weeks (as final dose)</b> This dose is only necessary for children age 12 through 59 months regardless of risk, or age 60 through 71 months with any risk, who received 3 doses before age 12 months.	
Inactivated poliovirus	6 weeks	<b>4 weeks</b>	<b>4 weeks</b> if current age is <4 years <b>6 months (as final dose)</b> if current age is 4 years or older	<b>6 months (minimum age 4 years for final dose)</b>	
Measles, mumps, rubella	12 months	<b>4 weeks</b>			
Varicella	12 months	<b>3 months</b>			
Hepatitis A	12 months	<b>6 months</b>			
Meningococcal ACWY	2 months MenACWY-CRM 2 years MenACWY-TT	<b>8 weeks</b>	See Notes	See Notes	
Children and adolescents age 7 through 18 years					
Meningococcal ACWY	Not applicable (N/A)	<b>8 weeks</b>			
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis	7 years	<b>4 weeks</b>	<b>4 weeks</b> if first dose of DTaP/DT was administered before the 1 <sup>st</sup> birthday <b>6 months (as final dose)</b> if first dose of DTaP/DT or Tdap/Td was administered at or after the 1 <sup>st</sup> birthday	<b>6 months</b> if first dose of DTaP/DT was administered before the 1 <sup>st</sup> birthday	
Human papillomavirus	9 years	<b>Routine dosing intervals are recommended.</b>			
Hepatitis A	N/A	<b>6 months</b>			
Hepatitis B	N/A	<b>4 weeks</b>	<b>8 weeks and at least 16 weeks after first dose</b>		
Inactivated poliovirus	N/A	<b>4 weeks</b>	<b>6 months</b> A fourth dose is not necessary if the third dose was administered at age 4 years or older <b>and</b> at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years <b>OR</b> if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella	N/A	<b>4 weeks</b>			
Varicella	N/A	<b>3 months</b> if younger than age 13 years. <b>4 weeks</b> if age 13 years or older			
Dengue	9 years	<b>6 months</b>	6 months		

# Table 3 Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2024

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

Vaccine and other immunizing agents	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count <sup>a</sup>		CSF leak or cochlear implant	Asplenia or persistent complement deficiencies	Heart disease or chronic lung disease	Kidney failure, End-stage renal disease or on Dialysis	Chronic liver disease	Diabetes	
			<15% or <200mm	≥15% and ≥200mm							
RSV-mAb (nirsevimab)		2nd RSV season	1 dose depending on maternal RSV vaccination status, See Notes				2nd RSV season for chronic lung disease (See Notes)	1 dose depending on maternal RSV vaccination status, See Notes			
Hepatitis B			Recommended for all age-eligible children who lack documentation of a complete vaccination series								
Rotavirus		SCID <sup>b</sup>	Not recommended for all children, but is recommended for some children based on increased risk for or severe outcomes from disease								
DTaP/Tdap	DTaP Tdap: 1 dose each pregnancy		Recommended for all age-eligible children who lack documentation of a complete vaccination series								
Hib		HSCT: 3 doses	See Notes			See Notes	Recommended for all age-eligible children who lack documentation of a complete vaccination series				
Pneumococcal		Recommended for all age-eligible children, and additional doses may be necessary based on medical condition or other indications. See Notes.									
IPV		Recommended for all age-eligible children who lack documentation of a complete vaccination series									
COVID-19		See Notes			Recommended for all age-eligible children who lack documentation of a complete vaccination series						
IIV4		Recommended for all age-eligible children who lack documentation of a complete vaccination series									
LAIV4		Contraindicated or not recommended *Vaccinate after pregnancy, if indicated						Asthma, wheezing: 2–4 years <sup>c</sup>			
MMR	*	Contraindicated or not recommended *Vaccinate after pregnancy, if indicated		Recommended for all age-eligible children who lack documentation of a complete vaccination series							
VAR	*	Contraindicated or not recommended *Vaccinate after pregnancy, if indicated		Recommended for all age-eligible children who lack documentation of a complete vaccination series							
Hepatitis A		Recommended for all age-eligible children who lack documentation of a complete vaccination series									
HPV	*	3 dose series. See Notes			Recommended for all age-eligible children who lack documentation of a complete vaccination series						
MenACWY		Recommended for all age-eligible children, and additional doses may be necessary based on medical condition or other indications. See Notes.		Recommended for all age-eligible children who lack documentation of a complete vaccination series							
MenB		No Guidance/ Not Applicable				Recommended for all age-eligible children who lack documentation of a complete vaccination series					
RSV (Abrysvo)	Seasonal administration, See Notes	No Guidance/ Not Applicable									
Dengue		Contraindicated or not recommended *Vaccinate after pregnancy, if indicated		Not recommended for all children, but is recommended for some children based on increased risk for or severe outcomes from disease							
Mpox	See Notes	Not recommended for all children, but is recommended for some children based on increased risk for or severe outcomes from disease									

  Recommended for all age-eligible children who lack documentation of a complete vaccination series
   Not recommended for all children, but is recommended for some children based on increased risk for or severe outcomes from disease
   Recommended for all age-eligible children, 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. For additional information regarding HIV laboratory parameters and use of live vaccines, see the General Best Practice Guidelines for Immunization, "Altered Immunocompetence," at [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html) and Table 4-1 (footnote J) at [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html).
 b. Severe Combined Immunodeficiency
c. LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months

# Notes Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

For vaccination recommendations for persons ages 19 years or older, see the Recommended Adult Immunization Schedule, 2024.

## Additional information

- For calculating intervals between doses, 4 weeks = 28 days. Intervals of  $\geq 4$  months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as “through.”
- Vaccine doses administered  $\leq 4$  days before the minimum age or interval are considered valid. Doses of any vaccine administered  $\geq 5$  days earlier than the minimum age or minimum interval should not be counted as valid and should be repeated as age appropriate. **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](http://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/](http://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](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html), and Immunization in Special Clinical Circumstances (In: Kimberlin DW, Barnett ED, Lynfield Ruth, Sawyer MH, eds. *Red Book: 2021–2024 Report of the Committee on Infectious Diseases*. 32<sup>nd</sup> ed. Itasca, IL: American Academy of Pediatrics; 2021:72–86).
- 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 child and adolescent vaccine schedule are covered by VICP except dengue, PPSV23, RSV, Mpox and COVID-19 vaccines. Mpox and COVID-19 vaccines are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation) or [www.hrsa.gov/cicp](http://www.hrsa.gov/cicp).

## COVID-19 vaccination

(minimum age: 6 months [Moderna and Pfizer-BioNTech COVID-19 vaccines], 12 years [Novavax COVID-19 Vaccine])

### Routine vaccination

#### Age 6 months–4 years

- **Unvaccinated:**
  - 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4-8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3-8, 11-16 weeks
- **Previously vaccinated\* with 1 dose of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna 4-8 weeks after the most recent dose.
- **Previously vaccinated\* with 2 or more doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 8 weeks after the most recent dose.
- **Previously vaccinated\* with 1 dose of any Pfizer-BioNTech:** 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 8 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3-8 weeks).
- **Previously vaccinated\* with 2 or more doses of any Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 8 weeks after the most recent dose.

#### Age 5–11 years

- **Unvaccinated:** 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech vaccine.
- **Previously vaccinated\* with 1 or more doses of Moderna or Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech at least 8 weeks after the most recent dose.

#### Age 12–18 years

- **Unvaccinated:**
  - 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech vaccine
  - 2-dose series of updated (2023–2024 Formula) Novavax at 0, 3-8 weeks
- **Previously vaccinated\* with any COVID-19 vaccine(s):** 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.

## Special situations

Persons who are moderately or severely immunocompromised\*\*

### Age 6 months–4 years

- **Unvaccinated:**
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 11 weeks.
- **Previously vaccinated\* with 1 dose of any Moderna:** 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna and dose 1: 4 weeks).
- **Previously vaccinated\* with 2 doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
- **Previously vaccinated\* with 3 or more doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 8 weeks after the most recent dose.
- **Previously vaccinated\* with 1 dose of any Pfizer-BioNTech:** 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 8 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3 weeks).
- **Previously vaccinated\* with 2 or more doses of any Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 8 weeks after the most recent dose.

### Age 5–11 years

- **Unvaccinated:**
  - 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
  - 3-dose series updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 7 weeks.
- **Previously vaccinated\* with 1 dose of any Moderna:** 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna and dose 1: 4 weeks).
- **Previously vaccinated\* with 2 doses of any Moderna:** 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.
- **Previously vaccinated\* with 1 dose of any Pfizer-BioNTech:** 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 4 weeks (minimum interval between previous Pfizer-BioNTech and dose 1: 3 weeks)
- **Previously vaccinated\* with 2 doses of any Pfizer-BioNTech:** 1 dose of 2023–2024 Pfizer-BioNTech at least 4 weeks after the most recent dose.



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- **Previously vaccinated\* with 3 or more doses of any Moderna or Pfizer-BioNTech:** 1 dose of updated (2023–2024 Formula) Moderna or Pfizer-BioNTech at least 8 weeks after the most recent dose.

## Age 12–18 years

### Unvaccinated:

- 3-dose series of updated (2023–2024 Formula) Moderna at 0, 4, 8 weeks
- 3-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 3, 7 weeks
- 2-dose series of updated (2023–2024 Formula) Novavax at 0, 3 weeks

### Previously vaccinated\* with 1 dose of any Moderna:

- 2-dose series of updated (2023–2024 Formula) Moderna at 0, 4 weeks (minimum interval between previous Moderna dose and dose 1: 4 weeks).

### Previously vaccinated\* with 2 doses of any Moderna:

- 1 dose of updated (2023–2024 Formula) Moderna at least 4 weeks after the most recent dose.

### Previously vaccinated\* with 1 dose of any Pfizer-BioNTech:

- 2-dose series of updated (2023–2024 Formula) Pfizer-BioNTech at 0, 4 weeks (minimum interval between previous Pfizer-BioNTech dose and dose 1: 3 weeks).

### Previously vaccinated\* with 2 doses of any Pfizer-BioNTech:

- 1 dose of updated (2023–2024 Formula) Pfizer-BioNTech at least 4 weeks after the most recent dose.

### Previously vaccinated\* with 3 or more doses of any Moderna or Pfizer-BioNTech:

- 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.

### Previously vaccinated\* with 1 or more doses of Janssen or Novavax or with or without dose(s) of any Original monovalent or bivalent COVID-19 vaccine:

- 1 dose of any updated (2023–2024 Formula) COVID-19 vaccine at least 8 weeks after the most recent dose.

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.

Administer an age-appropriate COVID-19 vaccine product for each dose. For information about transition from age 4 years to age 5 years or age 11 years to age 12 years during COVID-19 vaccination series, see Tables 1 and 2 at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html# covid-vaccines](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html# covid-vaccines).

Current COVID-19 schedule and dosage formulation available at [www.cdc.gov/covidschedule](http://www.cdc.gov/covidschedule). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, see [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

**\*Note:** Previously vaccinated is defined as having received any Original monovalent or bivalent COVID-19 vaccine (Janssen, Moderna, Novavax, Pfizer-BioNTech) prior to the updated 2023–2024 formulation.

**\*\*Note:** Persons who are moderately or severely immunocompromised have the option to receive one additional dose of updated (2023–2024 Formula) COVID-19 vaccine at least 2 months following the last recommended updated (2023–2024 Formula) COVID-19 vaccine dose. Further additional updated (2023–2024 Formula) COVID-19 vaccine dose(s) may be administered, informed by the clinical judgement of a healthcare provider and personal preference and circumstances. Any further additional doses should be administered at least 2 months after the last updated (2023–2024 Formula) COVID-19 vaccine dose. Moderately or severely immunocompromised children 6 months–4 years of age should receive homologous updated (2023–2024 Formula) mRNA vaccine dose(s) if they receive additional doses.

## Dengue vaccination (minimum age: 9 years)

### Routine vaccination

- Age 9–16 years living in areas with endemic dengue **AND** have laboratory confirmation of previous dengue infection
  - 3-dose series administered at 0, 6, and 12 months
- Endemic areas include Puerto Rico, American Samoa, US Virgin Islands, Federated States of Micronesia, Republic of Marshall Islands, and the Republic of Palau. For updated guidance on dengue endemic areas and pre-vaccination laboratory testing see [www.cdc.gov/mmwr/volumes/70/rr/rr7006a1.htm?s\\_cid=rr7006a1\\_w](http://www.cdc.gov/mmwr/volumes/70/rr/rr7006a1.htm?s_cid=rr7006a1_w) and [www.cdc.gov/dengue/vaccine/hcp/index.html](http://www.cdc.gov/dengue/vaccine/hcp/index.html)
- Dengue vaccine should not be administered to children traveling to or visiting endemic dengue areas.

## Diphtheria, tetanus, and pertussis (DTaP) vaccination (minimum age: 6 weeks [4 years for Kinrix® or Quadracel®])

### Routine vaccination

- 5-dose series (3-dose primary series at age 2, 4, and 6 months, followed by a booster doses at ages 15–18 months and 4–6 years

- **Prospectively:** Dose 4 may be administered as early as age 12 months if at least 6 months have elapsed since dose 3.
- **Retrospectively:** A 4<sup>th</sup> dose that was inadvertently administered as early as age 12 months may be counted if at least 4 months have elapsed since dose 3.

## Catch-up vaccination

- Dose 5 is not necessary if dose 4 was administered at age 4 years or older and at least 6 months after dose 3.
- For other catch-up guidance, see Table 2.

## Special situations

- **Wound management** in children less than age 7 years with history of 3 or more doses of tetanus-toxoid-containing vaccine: For all wounds except clean and minor wounds, administer DTaP if more than 5 years since last dose of tetanus-toxoid-containing vaccine. For detailed information, see [www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm](http://www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm).

## Haemophilus influenzae type b vaccination (minimum age: 6 weeks)

### Routine vaccination

- **ActHIB®, Hiberix®, Pentacel®, or Vaxelis®:** 4-dose series (3-dose primary series at age 2, 4, and 6 months, followed by a booster dose\* at age 12–15 months)
  - \*Vaxelis® is not recommended for use as a booster dose. A different Hib-containing vaccine should be used for the booster dose.
- **PedvaxHIB®:** 3-dose series (2-dose primary series at age 2 and 4 months, followed by a booster dose at age 12–15 months)

### Catch-up vaccination

- **Dose 1 at age 7–11 months:** Administer dose 2 at least 4 weeks later and dose 3 (final dose) at age 12–15 months or 8 weeks after dose 2 (whichever is later).
- **Dose 1 at age 12–14 months:** Administer dose 2 (final dose) at least 8 weeks after dose 1.
- **Dose 1 before age 12 months and dose 2 before age 15 months:** Administer dose 3 (final dose) at least 8 weeks after dose 2.
- **2 doses of PedvaxHIB® before age 12 months:** Administer dose 3 (final dose) at age 12–59 months and at least 8 weeks after dose 2.
- **1 dose administered at age 15 months or older:** No further doses needed
- **Unvaccinated at age 15–59 months:** Administer 1 dose.

# Notes Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

- **Previously unvaccinated children age 60 months or older who are not considered high risk:** Do not require catch-up vaccination

For other catch-up guidance, see Table 2. Vaxelis® can be used for catch-up vaccination in children less than age 5 years. Follow the catch-up schedule even if Vaxelis® is used for one or more doses. For detailed information on use of Vaxelis® see [www.cdc.gov/mmwr/volumes/69/wr/mm6905a5.htm](http://www.cdc.gov/mmwr/volumes/69/wr/mm6905a5.htm).

## Special situations

### • **Chemotherapy or radiation treatment:**

#### **Age 12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

*Doses administered within 14 days of starting therapy or during therapy should be repeated at least 3 months after therapy completion.*

### • **Hematopoietic stem cell transplant (HSCT):**

- 3-dose series 4 weeks apart starting 6 to 12 months after successful transplant, regardless of Hib vaccination history

### • **Anatomic or functional asplenia (including sickle cell disease):**

#### **Age 12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

#### **Unvaccinated\* persons age 5 years or older**

- 1 dose

### • **Elective splenectomy:**

#### **Unvaccinated\* persons age 15 months or older**

- 1 dose (preferably at least 14 days before procedure)

### • **HIV infection:**

#### **Age 12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

#### **Unvaccinated\* persons age 5–18 years**

- 1 dose

### • **Immunoglobulin deficiency, early component complement deficiency:**

#### **Age 12–59 months**

- Unvaccinated or only 1 dose before age 12 months: 2 doses, 8 weeks apart

- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

\**Unvaccinated* = Less than routine series (through age 14 months) **OR** no doses (age 15 months or older)

## Hepatitis A vaccination (minimum age: 12 months for routine vaccination)

### Routine vaccination

- 2-dose series (minimum interval: 6 months) at age 12–23 months

### Catch-up vaccination

- Unvaccinated persons through age 18 years should complete a 2-dose series (minimum interval: 6 months).
- Persons who previously received 1 dose at age 12 months or older should receive dose 2 at least 6 months after dose 1.
- Adolescents age 18 years or older may receive the combined HepA and HepB vaccine, **Twinrix**®, as a 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).

### International travel

- Persons traveling to or working in countries with high or intermediate endemic hepatitis A ([www.cdc.gov/travel/](http://www.cdc.gov/travel/)):
  - **Infants age 6–11 months:** 1 dose before departure; revaccinate with 2 doses (separated by at least 6 months) between age 12–23 months.
  - **Unvaccinated age 12 months or older:** Administer dose 1 as soon as travel is considered.

## Hepatitis B vaccination (minimum age: birth)

### Routine vaccination

- 3-dose series at age 0, 1–2, 6–18 months (**use monovalent HepB vaccine for doses administered before age 6 weeks**)
  - Birth weight  $\geq 2,000$  grams: 1 dose within 24 hours of birth if medically stable
  - Birth weight  $< 2,000$  grams: 1 dose at chronological age 1 month or hospital discharge (whichever is earlier and even if weight is still  $< 2,000$  grams).
- Infants who did not receive a birth dose should begin the series as soon as possible (see Table 2 for minimum intervals).
- Administration of 4 doses is permitted when a combination vaccine containing HepB is used after the birth dose.
- **Minimum intervals (see Table 2):** when 4 doses are administered, substitute “dose 4” for “dose 3” in these calculations

- **Final (3rd or 4th) dose:** age 6–18 months (**minimum age 24 weeks**)

### • **Mother is HBsAg-positive**

- **Birth dose (monovalent HepB vaccine only):** administer **HepB vaccine** and **hepatitis B immune globulin (HBIG)** (in separate limbs) within 12 hours of birth, regardless of birth weight.
- **Birth weight  $< 2000$  grams:** administer 3 additional doses of HepB vaccine beginning at age 1 month (total of 4 doses)
- **Final (3rd or 4th) dose:** administer at age 6 months (**minimum age 24 weeks**)
- Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose. Do not test before age 9 months.

### • **Mother is HBsAg-unknown**

If other evidence suggestive of maternal hepatitis B infection exists (e.g., presence of HBV DNA, HBsAg-positive, or mother known to have chronic hepatitis B infection), manage infant as if mother is HBsAg-positive

#### - **Birth dose (monovalent HepB vaccine only):**

- Birth weight  $\geq 2,000$  grams: administer **HepB vaccine** within 12 hours of birth. Determine mother’s HBsAg status as soon as possible. If mother is determined to be HBsAg-positive, administer **HBIG** as soon as possible (in separate limb), but no later than 7 days of age.
- Birth weight  $< 2,000$  grams: administer **HepB vaccine** and **HBIG** (in separate limbs) within 12 hours of birth. Administer 3 additional doses of **HepB vaccine** beginning at age 1 month (total of 4 doses)

#### - **Final (3rd or 4th) dose:** administer at age 6 months (**minimum age 24 weeks**)

- If mother is determined to be HBsAg-positive or if status remains unknown, test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose. Do not test before age 9 months.

### Catch-up vaccination

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, 6 months. See Table 2 for minimum intervals
- Adolescents age 11–15 years may use an alternative 2-dose schedule with at least 4 months between doses (adult formulation **Recombivax HB**® only).
- Adolescents age 18 years may receive:
  - **HepLisav-B**®: 2-dose series at least 4 weeks apart
  - **PreHevrio**®: 3-dose series at 0, 1, and 6 months
  - Combined HepA and HepB vaccine, **Twinrix**®: 3-dose series (0, 1, and 6 months) or 4-dose series (3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months).

# Notes Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

## Special situations

- Revaccination is not generally recommended for persons with a normal immune status who were vaccinated as infants, children, adolescents, or adults.
- **Post-vaccination serology testing and revaccination** (if anti-HBs <10mIU/mL) is recommended for certain populations, including:
  - Infants born to HBsAg-positive mothers
  - Persons who are predialysis or on maintenance dialysis
  - Other immunocompromised persons
  - For detailed revaccination recommendations, see [www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html](http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html).

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

## Human papillomavirus vaccination (minimum age: 9 years)

### Routine and catch-up vaccination

- HPV vaccination routinely recommended at **age 11–12 years (can start at age 9 years)** and catch-up HPV vaccination recommended for all persons through age 18 years if not adequately vaccinated
- 2- or 3-dose series depending on age at initial vaccination:
  - **Age 9–14 years at initial vaccination:** 2-dose series at 0, 6–12 months (minimum interval: 5 months; repeat dose if administered too soon)
  - **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 recommended dosing intervals.

### Special situations

- **Immunocompromising conditions, including HIV infection:** 3-dose series, even for those who initiate vaccination at age 9 through 14 years.
- **History of sexual abuse or assault:** Start at age 9 years
- **Pregnancy:** Pregnancy testing not needed before vaccination; HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant

## Influenza vaccination

(minimum age: 6 months [IIV], 2 years [LAIV4], 18 years [recombinant influenza vaccine, RIV4])

### Routine vaccination

- Use any influenza vaccine appropriate for age and health status annually:
  - **Age 6 months–8 years** who have received **fewer** than 2 influenza vaccine doses before July 1, 2023, or whose influenza vaccination history is unknown: 2 doses, separated by at least 4 weeks. Administer dose 2 even if the child turns 9 years between receipt of dose 1 and dose 2.
  - **Age 6 months–8 years** who have received **at least 2** influenza vaccine doses before July 1, 2023: 1 dose
  - **Age 9 years or older:** 1 dose
- For the 2023–2024 season, see [www.cdc.gov/mmwr/volumes/72/rr/rr7202a1.htm](http://www.cdc.gov/mmwr/volumes/72/rr/rr7202a1.htm).
- For the 2024–25 season, see the 2024–25 ACIP influenza vaccine recommendations.

### Special situations

- **Close contacts (e.g., household contacts) of severely immunosuppressed persons who require a protected environment:** should not receive LAIV4. If LAIV4 is given, they should avoid contact with 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 (minimum age: 12 months for routine vaccination)

### Routine vaccination

- 2-dose series at age 12–15 months, age 4–6 years
- MMR or MMRV\* may be administered

**Note:** For dose 1 in children age 12–47 months, it is recommended to administer MMR and varicella vaccines separately. MMRV\* may be used if parents or caregivers express a preference.

### Catch-up vaccination

- Unvaccinated children and adolescents: 2-dose series at least 4 weeks apart\*
- The maximum age for use of MMRV\* is 12 years.

## Special situations

### International travel

- **Infants age 6–11 months:** 1 dose before departure; revaccinate with 2-dose series at age 12–15 months (12 months for children in high-risk areas) and dose 2 as early as 4 weeks later.\*
- **Unvaccinated children age 12 months or older:** 2-dose series at least 4 weeks apart before departure\*

- 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](http://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm)

\***Note:** If MMRV is used, the minimum interval between MMRV doses is 3 months

## Meningococcal serogroup A,C,W,Y vaccination (minimum age: 2 months [MenACWY-CRM, Menveo], 2 years [MenACWY-TT, MenQuadfi]), 10 years [MenACWY-TT/MenB-FHbp, Penbraya])

### Routine vaccination

- 2-dose series at age 11–12 years; 16 years

### Catch-up vaccination

- Age 13–15 years: 1 dose now and booster at age 16–18 years (minimum interval: 8 weeks)
- Age 16–18 years: 1 dose

### Special situations

**Anatomic or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:**

#### Menveo\*\*

- Dose 1 at age 2 months: 4-dose series (additional 3 doses at age 4, 6, and 12 months)
- Dose 1 at age 3–6 months: 3- or 4-dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
- Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
- Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart

#### MenQuadfi®

- Dose 1 at age 24 months or older: 2-dose series at least 8 weeks apart



# Notes Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

**Travel to countries with hyperendemic or epidemic meningococcal disease, including countries in the African meningitis belt or during the Hajj** ([www.cdc.gov/travel/](http://www.cdc.gov/travel/)):

- Children less than age 24 months:
  - **Menveo<sup>®</sup>\*** (age 2–23 months)
    - Dose 1 at age 2 months: 4-dose series (additional 3 doses at age 4, 6, and 12 months)
    - Dose 1 at age 3–6 months: 3- or 4-dose series (dose 2 [and dose 3 if applicable] at least 8 weeks after previous dose until a dose is received at age 7 months or older, followed by an additional dose at least 12 weeks later and after age 12 months)
    - Dose 1 at age 7–23 months: 2-dose series (dose 2 at least 12 weeks after dose 1 and after age 12 months)
- Children age 2 years or older: 1 dose Menveo<sup>®</sup>\* or MenQuadfi<sup>®</sup>

**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<sup>®</sup>\*** or **MenQuadfi<sup>®</sup>**

**Adolescent vaccination of children who received MenACWY prior to age 10 years:**

- **Children for whom boosters are recommended** because of an ongoing increased risk of meningococcal disease (e.g., those with complement component deficiency, HIV, or asplenia): Follow the booster schedule for persons at increased risk.
- **Children for whom boosters are not recommended** (e.g., a healthy child who received a single dose for travel to a country where meningococcal disease is endemic): Administer MenACWY according to the recommended adolescent schedule with dose 1 at age 11–12 years and dose 2 at age 16 years.

\**Menveo has two formulations: lyophilized and liquid. The liquid formulation should not be used before age 10 years. See [www.cdc.gov/vaccines/vpd/mening/downloads/menveo-single-vial-presentation.pdf](http://www.cdc.gov/vaccines/vpd/mening/downloads/menveo-single-vial-presentation.pdf).*

**Note:** For MenACWY **booster dose recommendations** for groups listed under “Special situations” and in an outbreak setting and additional meningococcal vaccination information, see [www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm](http://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm).

Children age 10 years or older may receive a single dose of Penbraya<sup>™</sup> as an alternative to separate administration of MenACWY and MenB when both vaccines would be given on the same clinic day (see “Meningococcal serogroup B vaccination” section below for more information).

**Meningococcal serogroup B vaccination** (minimum age: 10 years [MenB-4C, Bexsero<sup>®</sup>; MenB-FHbp, Trumenba<sup>®</sup>; MenACWY-TT/MenB-FHbp, Penbraya<sup>™</sup>])

## Shared clinical decision-making

- **Adolescents not at increased risk** age 16–23 years (preferred age 16–18 years) based on shared clinical decision-making:
  - **Bexsero<sup>®</sup>:** 2-dose series at least 1 month apart
  - **Trumenba<sup>®</sup>:** 2-dose series at least 6 months apart (if dose 2 is administered earlier than 6 months, administer a 3<sup>rd</sup> dose at least 4 months after dose 2)

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](http://www.cdc.gov/vaccines/hcp/admin/downloads/isd-job-aid-scdm-mening-b-shared-clinical-decision-making.pdf)

## Special situations

**Anatomic or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:**

- **Bexsero<sup>®</sup>:** 2-dose series at least 1 month apart
- **Trumenba<sup>®</sup>:** 3-dose 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 4<sup>th</sup> dose should be administered at least 4 months after dose 3)

**Note:** **Bexsero<sup>®</sup>** and **Trumenba<sup>®</sup>** are not interchangeable; the same product should be used for all doses in a series.

For MenB **booster dose recommendations** for groups listed under “Special situations” and in an outbreak setting and additional meningococcal vaccination information, see [www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm](http://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm).

Children age 10 years or older may receive a dose of Penbraya<sup>™</sup> as an alternative to separate administration of MenACWY and MenB when both vaccines would be given on the same clinic day. For age-eligible children not at increased risk, if Penbraya<sup>™</sup> is used for dose 1 MenB, MenB-FHbp (Trumenba) should be administered for dose 2 MenB. For age-eligible children at increased risk of meningococcal disease, Penbraya<sup>™</sup> 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<sup>™</sup> dose.

**Mpox vaccination** (minimum age: 18 years [Jynneos<sup>®</sup>])

## Special situations

- **Age 18 years and at risk for Mpox infection:** 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.

For detailed information, see: [www.cdc.gov/vaccines/acip/meetings/downloads/slides-2023-10-25-26/04-MPOX-Rao-508.pdf](http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2023-10-25-26/04-MPOX-Rao-508.pdf)

**Pneumococcal vaccination** (minimum age: 6 weeks [PCV15], [PCV 20]; 2 years [PPSV23])

## Routine vaccination with PCV

- 4-dose series at 2, 4, 6, 12–15 months

## Catch-up vaccination with PCV

- Healthy children ages 2–4 years with any incomplete\* PCV series: 1 dose PCV
- For other catch-up guidance, see Table 2.

**Note:** For children **without** risk conditions, PCV20 is not indicated if they have received 4 doses of PCV13 or PCV15 or another age appropriate complete PCV series.

## Special situations

**Children and adolescents with cerebrospinal fluid leak; chronic heart disease; chronic kidney disease (excluding maintenance dialysis and nephrotic syndrome); chronic liver disease; chronic lung disease (including moderate persistent or severe persistent asthma); cochlear implant; or diabetes mellitus:**

### Age 2–5 years

- Any incomplete\* PCV series with:
  - 3 PCV doses: 1 dose PCV (at least 8 weeks after the most recent PCV dose)
  - Less than 3 PCV doses: 2 doses PCV (at least 8 weeks after the most recent dose and administered at least 8 weeks apart)
- Completed recommended PCV series but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 administer at least 8 weeks after the most recent PCV dose.

### Age 6–18 years

- Not previously received any dose of PCV13, PCV15, or PCV20: administer 1 dose of PCV15 or PCV20. If PCV15 is used and no previous receipt of PPSV23, administer 1 dose of PPSV23 at least 8 weeks after the PCV15 dose.\*\*
- Received PCV before age 6 years but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: 1 dose PCV20 OR 1 dose PPSV23 administer at least 8 weeks after the most recent PCV dose.
- Received PCV13 only at or after age 6 years: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose.
- Received 1 dose PCV13 and 1 dose PPSV23 at or after age 6 years: no further doses of any PCV or PPSV23 indicated.

**Children and adolescents on maintenance dialysis, or with immunocompromising conditions such as nephrotic syndrome; congenital or acquired asplenia or splenic dysfunction; congenital or acquired immunodeficiencies; diseases and conditions treated with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and solid organ transplant; HIV infection; or sickle cell disease or other hemoglobinopathies:**

### Age 2–5 years

- Any incomplete\* PCV series:
  - 3 PCV doses: 1 dose PCV (at least 8 weeks after the most recent PCV dose)
  - Less than 3 PCV doses: 2 doses PCV (at least 8 weeks after the most recent dose and administered at least 8 weeks apart)
- Completed recommended PCV series but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no further PCV or PPSV23 doses needed
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV dose. If PPSV23 is used, administer 1 dose of PCV20 or dose 2 PPSV23 at least 5 years after dose 1 PPSV23.

### Age 6–18 years

- Not previously received any dose of PCV13, PCV15, or PCV20: administer 1 dose of PCV15 or 1 dose of PCV20. If PCV15 is used and no previous receipt of PPSV23, administer 1 dose of PPSV23 at least 8 weeks after the PCV15 dose.\*\*
- Received PCV before age 6 years but have not received PPSV23
  - Previously received at least 1 dose of PCV20: no additional dose of PCV or PPSV23
  - Not previously received PCV20: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV dose. If PPSV23 is used, administer either PCV20 or dose 2 PPSV23 at least 5 years after dose 1 PPSV23.
- Received PCV13 only at or after age 6 years: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose. If PPSV23 is used, administer 1 dose of PCV20 or dose 2 PPSV23 at least 5 years after dose 1 PPSV23.
- Received 1 dose PCV13 and 1 dose PPSV23 at or after age 6 years: administer 1 dose PCV20 OR 1 dose PPSV23 at least 8 weeks after the most recent PCV13 dose and at least 5 years after dose 1 PPSV23.

\**Incomplete series* = Not having received all doses in either the recommended series or an age-appropriate catch-up series. See Table 2 in ACIP pneumococcal recommendations at [stacks.cdc.gov/view/cdc/133252](https://stacks.cdc.gov/view/cdc/133252)

\*\**When both PCV15 and PPSV23 are indicated, administer all doses of PCV15 first. PCV15 and PPSV23 should not be administered during the same visit.*

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/vaccines/vpd/pneumo/hcp/pneumoapp.html](https://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

## Poliovirus vaccination (minimum age: 6 weeks)

### Routine vaccination

- 4-dose series at ages 2, 4, 6–18 months, 4–6 years; administer the final dose on or after age 4 years and at least 6 months after the previous dose.
- 4 or more doses of IPV can be administered before age 4 years when a combination vaccine containing IPV is used. However, a dose is still recommended on or after age 4 years and at least 6 months after the previous dose.

### Catch-up vaccination

- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- **Adolescents age 18 years 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 persons aged 18 years or older born and raised in the United States can assume they were vaccinated against polio as children.

**Series containing oral poliovirus vaccine (OPV),** either mixed OPV-IPV or OPV-only series:

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See [www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s\\_cid=mm6601a6\\_w](https://www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_cid=mm6601a6_w).
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements.
  - Doses of OPV administered before April 1, 2016, should be counted (unless specifically noted as administered during a campaign).
  - Doses of OPV administered on or after April 1, 2016, should not be counted.
  - For guidance to assess doses documented as “OPV;” see [www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s\\_cid=mm6606a7\\_w](https://www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w).
- For other catch-up guidance, see Table 2.

## Special situations

- **Adolescents aged 18 years at increased risk of exposure to poliovirus and completed primary series\***: may administer one lifetime IPV booster

\***Note**: Complete primary series consist 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](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Respiratory syncytial virus immunization (minimum age: birth [Nirsevimab, RSV-mAb (Beyfortus™)])

### Routine immunization

- **Infants born October – March in most of the continental United States\***

- Mother did not receive RSV vaccine OR mother's RSV vaccination status is unknown: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting

- Mother received RSV vaccine **less than 14 days** prior to delivery: administer 1 dose nirsevimab within 1 week of birth in hospital or outpatient setting

- Mother received RSV vaccine **at least 14 days** prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers (see special populations and situations at [www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html](http://www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html))

- **Infants born April–September in most of the continental United States\***

- Mother did not receive RSV vaccine OR mother's RSV vaccination status is unknown: administer 1 dose nirsevimab shortly before start of RSV season\*

- Mother received RSV vaccine **less than 14 days** prior to delivery: administer 1 dose nirsevimab shortly before start of RSV season\*

- Mother received RSV vaccine **at least 14 days** prior to delivery: nirsevimab not needed but can be considered in rare circumstances at the discretion of healthcare providers (see special populations and situations at [www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html](http://www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html))

Infants with prolonged birth hospitalization\*\* (e.g., for prematurity) discharged October through March should be immunized shortly before or promptly after discharge.

## Special situations

- **Ages 8–19 months with chronic lung disease of prematurity requiring medical support (e.g., chronic corticosteroid therapy, diuretic therapy, or supplemental oxygen) any time during the 6-month period before the start of the second RSV season; severe immunocompromise; cystic fibrosis with either weight for length <10th percentile or manifestation of severe lung disease (e.g., previous hospitalization for pulmonary exacerbation in the first year of life or abnormalities on chest imaging that persist when stable)\*\***:

- 1 dose nirsevimab shortly before start of second RSV season\*

- **Ages 8–19 months who are American Indian or Alaska Native:**

- 1 dose nirsevimab shortly before start of second RSV season\*

- **Age-eligible and undergoing cardiac surgery with cardiopulmonary bypass\*\***: 1 additional dose of nirsevimab after surgery. For additional details see special populations and situations at [www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html](http://www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html)

\***Note**: While the timing of the onset and duration of RSV season may vary, nirsevimab may be administered October through March in most of the continental United States. Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdiction with tropical climate) should follow guidance from public health authorities (e.g., CDC, health departments) or regional medical centers on timing of administration based on local RSV seasonality. Although optimal timing of administration is just before the start of the RSV season, nirsevimab may also be administered during the RSV season to infants and children who are age-eligible.

\*\***Note**: Nirsevimab can be administered to children who are eligible to receive palivizumab. Children who have received nirsevimab should not receive palivizumab for the same RSV season.

For further guidance, see [www.cdc.gov/mmwr/volumes/72/wr/mm7234a4.htm](http://www.cdc.gov/mmwr/volumes/72/wr/mm7234a4.htm) and [www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html](http://www.cdc.gov/vaccines/vpd/rsv/hcp/child-faqs.html)

## Respiratory syncytial virus vaccination (RSV [Abrysvo™])

### Routine vaccination

- **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 RSV vaccine (Abrysvo™). Administer RSV vaccine regardless of previous RSV infection.

- Either maternal RSV vaccination or infant immunization with nirsevimab (RSV monoclonal antibody) is recommended to prevent respiratory syncytial virus lower respiratory tract infection in infants.

- **All other pregnant persons**: RSV vaccine not recommended.

There is currently no ACIP recommendation for RSV vaccination in subsequent pregnancies. No data are available to inform whether additional doses are needed in later pregnancies.

\***Note**: Providers in jurisdictions with RSV seasonality that differs from most of the continental United States (e.g., Alaska, jurisdiction with tropical climate) should follow guidance from public health authorities (e.g., CDC, health departments) or regional medical centers on timing of administration based on local RSV seasonality.

## Rotavirus vaccination (minimum age: 6 weeks)

### Routine vaccination

- **Rotarix®**: 2-dose series at age 2 and 4 months
- **RotaTeq®**: 3-dose series at age 2, 4, and 6 months
- If any dose in the series is either **RotaTeq®** or unknown, default to 3-dose series.

### Catch-up vaccination

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Table 2.

## Tetanus, diphtheria, and pertussis (Tdap) vaccination

(minimum age: 11 years for routine vaccination, 7 years for catch-up vaccination)

### Routine vaccination

- **Age 11–12 years:** 1 dose Tdap (adolescent booster)
- **Pregnancy:** 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36.

**Note:** Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

### Catch-up vaccination

- **Age 13–18 years who have not received Tdap:** 1 dose Tdap (adolescent booster)
- **Age 7–18 years not fully vaccinated\* with DTaP:** 1 dose Tdap as part of the catch-up series (preferably the first dose); if additional doses are needed, use Td or Tdap.
- **Tdap administered at age 7–10 years:**
  - **Age 7–9 years** who receive Tdap should receive the adolescent Tdap booster dose at age 11–12 years.
  - **Age 10 years** who receive Tdap do not need the adolescent Tdap booster dose at age 11–12 years.
- **DTaP inadvertently administered on or after age 7 years:**
  - **Age 7–9 years:** DTaP may count as part of catch-up series. Administer adolescent Tdap booster dose at age 11–12 years.
  - **Age 10–18 years:** Count dose of DTaP as the adolescent Tdap booster dose.
- For other catch-up guidance, see Table 2.

### Special situations

- **Wound management** in persons age 7 years or older with history of 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 age 11 years or older who have not previously received Tdap or whose Tdap history is unknown. If a tetanus-toxoid-containing vaccine is indicated for a pregnant adolescent, use Tdap.
- For detailed information, see [www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm](http://www.cdc.gov/mmwr/volumes/69/wr/mm6903a5.htm).

\*Fully vaccinated = 5 valid doses of DTaP OR 4 valid doses of DTaP if dose 4 was administered at age 4 years or older

## Varicella vaccination (minimum age: 12 months)

### Routine vaccination

- 2-dose series at age 12–15 months, 4–6 years
- VAR or MMRV may be administered\*
- Dose 2 may be administered as early as 3 months after dose 1 (a dose inadvertently administered after at least 4 weeks may be counted as valid)

\***Note:** For dose 1 in children age 12–47 months, it is recommended to administer MMR and varicella vaccines separately. MMRV may be used if parents or caregivers express a preference.

### Catch-up vaccination

- Ensure persons age 7–18 years without evidence of immunity (see *MMWR* at [www.cdc.gov/mmwr/pdf/rr/rr5604.pdf](http://www.cdc.gov/mmwr/pdf/rr/rr5604.pdf)) have a 2-dose series:
  - **Age 7–12 years:** Routine interval: 3 months (a dose inadvertently administered after at least 4 weeks may be counted as valid)
  - **Age 13 years and older:** Routine interval: 4–8 weeks (minimum interval: 4 weeks)
  - The maximum age for use of *MMRV* is 12 years.



# Appendix

## Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

### Guide to Contraindications and Precautions to Commonly Used Vaccines

Adapted from Table 4-1 in *Advisory Committee on Immunization Practices (ACIP) General Best Practice Guidelines for Immunization: Contraindication and Precautions, Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices—United States, 2023–24 Influenza Season* | MMWR (cdc.gov), *Contraindications and Precautions for COVID-19 Vaccination*, and *Contraindications and Precautions for JYNNEOS Vaccination*

Vaccines and other Immunizing Agents	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
COVID-19 mRNA vaccines [Pfizer-BioNTech, Moderna]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a component of an mRNA COVID-19 vaccine<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>Diagnosed non-severe allergy (e.g., urticaria beyond the injection site) to a component of an mRNA COVID-19 vaccine<sup>4</sup>; or non-severe, immediate (onset less than 4 hours) allergic reaction after administration of a previous dose of an mRNA COVID-19 vaccine</li> <li>Myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine</li> <li>Multisystem inflammatory syndrome in children (MIS-C) or multisystem inflammatory syndrome in adults (MIS-A)</li> <li>Moderate or severe acute illness, with or without fever</li> </ul>
COVID-19 protein subunit vaccine [Novavax]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a component of a Novavax COVID-19 vaccine<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>Diagnosed non-severe allergy (e.g., urticaria beyond the injection site) to a component of Novavax COVID-19 vaccine<sup>4</sup>; or non-severe, immediate (onset less than 4 hours) allergic reaction after administration of a previous dose of a Novavax COVID-19 vaccine</li> <li>Myocarditis or pericarditis within 3 weeks after a dose of any COVID-19 vaccine</li> <li>Multisystem inflammatory syndrome in children (MIS-C) or multisystem inflammatory syndrome in adults (MIS-A)</li> <li>Moderate or severe acute illness, with or without fever</li> </ul>
Influenza, egg-based, inactivated injectable (IIV4)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, cell culture-based inactivated injectable (ccIV4) [Flucelvax Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) to any ccIV of any valency, or to any component<sup>3</sup> of ccIV4</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using ccIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, recombinant injectable (RIV4) [Flublok Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component<sup>3</sup> of RIV4</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, ccIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, live attenuated (LAIV4) [Flumist Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIV, RIV, or LAIV of any valency)</li> <li>Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> <li>Children age 2–4 years with a history of asthma or wheezing</li> <li>Anatomic or functional asplenia</li> <li>Immunocompromised due to any cause including, but not limited to, medications and HIV infection</li> <li>Close contacts or caregivers of severely immunosuppressed persons who require a protected environment</li> <li>Pregnancy</li> <li>Cochlear implant</li> <li>Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear or any other cranial CSF leak</li> <li>Children and adolescents receiving aspirin or salicylate-containing medications</li> <li>Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Asthma in persons age 5 years old or older</li> <li>Persons with underlying medical conditions other than those listed under contraindications that might predispose to complications after wild-type influenza virus infection, e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)</li> <li>Moderate or severe acute illness with or without fever</li> </ul>

- When a contraindication is present, a vaccine should **NOT** be administered. Kroger A, Bahta L, Hunter P. [ACIP General Best Practice Guidelines for Immunization](#).
- 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](#).
- Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. See [Package inserts for U.S.-licensed vaccines](#).
- See [package inserts](#) and [FDA EUA fact sheets](#) for a full list of vaccine ingredients. mRNA COVID-19 vaccines contain polyethylene glycol (PEG).

# Appendix

## Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

Vaccines and other Immunizing Agents	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
Dengue (DEN4CYD)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>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)</li> <li>Lack of laboratory confirmation of a previous Dengue infection</li> </ul>	<ul style="list-style-type: none"> <li>Pregnancy</li> <li>HIV infection without evidence of severe immunosuppression</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Diphtheria, tetanus, pertussis (DTaP)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>For DTaP 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 or DTaP</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after previous dose of tetanus-toxoid-containing vaccine</li> <li>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</li> <li>For DTaP only: Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy; defer DTaP until neurologic status clarified and stabilized</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
<i>Haemophilus influenzae</i> type b (Hib)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Less than age 6 weeks</li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis A (HepA)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including neomycin</li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis B (HepB)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including yeast</li> <li>Pregnancy: <i>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<sup>4</sup>.</i></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis A-Hepatitis B vaccine (HepA-HepB) [Twinrix]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including neomycin and yeast</li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Human papillomavirus (HPV)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Pregnancy: <i>HPV vaccination not recommended.</i></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Measles, mumps, rubella (MMR) Measles, mumps, rubella, and varicella (MMRV)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>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)</li> <li>Pregnancy</li> <li>Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent</li> </ul>	<ul style="list-style-type: none"> <li>Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product)</li> <li>History of thrombocytopenia or thrombocytopenic purpura</li> <li>Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing</li> <li>Moderate or severe acute illness with or without fever</li> <li>For MMRV only: Personal or family (i.e., sibling or parent) history of seizures of any etiology</li> </ul>
Meningococcal ACWY (MenACWY) MenACWY-CRM [Menveo] MenACWY-TT [MenQuadfi]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>For Men ACWY-CRM only: severe allergic reaction to any diphtheria toxoid—or CRM197—containing vaccine</li> <li>For MenACWY-TT only: severe allergic reaction to a tetanus toxoid-containing vaccine</li> </ul>	<ul style="list-style-type: none"> <li>For MenACWY-CRM only: Preterm birth if less than age 9 months</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Meningococcal B (MenB) MenB-4C [Bexsero] MenB-FHbp [Trumenba]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Pregnancy</li> <li>For MenB-4C only: Latex sensitivity</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Meningococcal ABCWY (MenACWY-TT/MenB-FHbp) [Penbraya]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Severe allergic reaction to a tetanus toxoid-containing vaccine</li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness, with or without fever</li> </ul>
Mpox [Jynneos]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness, with or without fever</li> </ul>
Pneumococcal conjugate (PCV)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid-containing vaccine or its component<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Pneumococcal polysaccharide (PPSV23)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Poliovirus vaccine, inactivated (IPV)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Pregnancy</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
RSV monoclonal antibody (RSV-mAb)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Respiratory syncytial virus vaccine (RSV)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Rotavirus (RV) RV1 [Rotarix] RV5 [RotaTeq]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Severe combined immunodeficiency (SCID)</li> <li>History of intussusception</li> </ul>	<ul style="list-style-type: none"> <li>Altered immunocompetence other than SCID</li> <li>Chronic gastrointestinal disease</li> <li>RV1 only: Spina bifida or bladder exstrophy</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Tetanus, diphtheria, and acellular pertussis (Tdap) Tetanus, diphtheria (Td)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus-toxoid-containing vaccine</li> <li>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</li> <li>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</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Varicella (VAR)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>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)</li> <li>Pregnancy</li> <li>Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent</li> </ul>	<ul style="list-style-type: none"> <li>Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product)</li> <li>Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)</li> <li>Use of aspirin or aspirin-containing products</li> <li>Moderate or severe acute illness with or without fever</li> <li>If using MMRV, see MMR/MMRV for additional precautions</li> </ul>

- 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](https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html)
- 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](https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html)
- 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](https://www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states).
- For information on the pregnancy exposure registries for persons who were inadvertently vaccinated with Heplisav-B or PreHevbrio while pregnant, please visit [heplisavbpregnancyregistry.com](https://heplisavbpregnancyregistry.com) or [www.prehevbrio.com/#safety](https://www.prehevbrio.com/#safety).
- Full prescribing information for BEYFORTUS (nirsevimab-alip) [www.accessdata.fda.gov/drugsatfda\\_docs/label/2023/761328s000lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2023/761328s000lbl.pdf)

# Addendum

## Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2024

In addition to the recommendations presented in the previous sections of this immunization schedule, ACIP has approved the following recommendations by majority vote since October 26, 2023. The following recommendations have been adopted by the CDC Director and are now official. Links are provided if these recommendations have been published in *Morbidity and Mortality Weekly Report (MMWR)*.

Vaccines	Recommendations	Effective Date of Recommendation*
No new vaccines or vaccine recommendations to report		

\*The effective date is the date when the CDC director adopted the recommendation and when the ACIP recommendation became official.