Centers for Disease Control and Prevention





Recommendations from the Combined Immunization Schedule WG for the 2022 Immunization Schedules for Children/Adolescents and Adults

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ACIP Meeting November 3, 2021

Combined Immunization Schedules Work Group

- The Combined Immunization Schedule WG updates the child/adolescent and adult immunization schedules annually.
 - Child/adolescent immunization schedule: recommendations for persons 18 years of age or younger
 - Adult immunization schedule: recommendations for persons 19 years of age or older

• The goal of the Combined Immunization Schedule WG is to better harmonize the child/adolescent and adult schedules.

Thank You



Henry Bernstein, DO, MHCM, FAAP ACIP Term: 11/27/2017-6/30/2021

Professor, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell

Cohen Children's Medical Center New Hyde Park, NY

Welcome



Sybil Cineas, MD, FAAP, FACP, ACIP Term: 7/28/2021 – 6/30/2025

Associate Professor of Medicine, Pediatrics, and Medical Science

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Combined Immunization Schedule Work Group 2021

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Sean O'Leary (AAP)

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Disclaimer

 The use of vaccine trade names is for identification purposes only and does not imply endorsement by the Centers for Disease Control and Prevention.

• The 2022 schedules presented in the following slides are **drafts** and are therefore subject to change based on ACIP's discussion and vote.

Reason Topic is Being Presented to ACIP

- ACIP approval of the proposed schedules is necessary prior to publication in Morbidity and Mortality Weekly Report in February 2022.
- The following professional societies also approve the schedules prior to the 2022 publications
 - American Academy of Pediatrics (AAP) only child/adolescent schedule
 - American College of physicians (ACP) only adult schedule
 - American Academy of Family Physicians (AAFP)
 - American College of Obstetricians and Gynecologists (ACOG)
 - American College of Nurse-Midwives (ACNM)
 - National Association of Pediatric Nurse Practitioners (NAPNAP) only child/adolescent schedule
 - American Academy of Physician Assistants (AAPA)
 - Society for Healthcare Epidemiology of America (SHEA) only adult schedule
- New policies are not established in the proposed schedules.
 - Annual schedules reflect recommendations already approved by ACIP

Outline

- Harmonization between the child/adolescent and adult schedules
- Edits to all tables
- Content changes of the notes
- New appendix listing contraindications and precautions
- Discussion and Vote

2022 Child and Adolescent Immunization Schedule

Dr. A. Patricia Wodi

Child and Adolescent Immunization Schedule: 2022 updates

- ACIP Votes since October 2020
 - Dengue vaccination (ACIP vote June 2021)
 - Use of dengue vaccine in ages 9–16 years in endemic areas
 - Influenza vaccination (ACIP vote June 2021; MMWR August 2021)
 - 2021–22 Influenza vaccine recommendations
 - Minimum age for cell culture—based inactivated influenza vaccine
 - Contraindications and precautions for influenza vaccines
- Edits to tables and notes of other vaccines for clarity
- Appendix listing contraindications and precautions for vaccine types

Overview of Proposed Updates

- Changes to Tables
 - Cover Page
 - Table 1, 2 and 3
- Changes to Vaccination Notes
 - COVID-19
 - Dengue
 - Hib
 - Hepatitis A
 - Hepatitis B
 - Human Papillomavirus
 - Influenza
 - Measles, Mumps and Rubella
 - Meningococcal
 - Varicella
- Appendix

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

Trade name(s)

Dengvaxia^o

Abbreviation(s)

DEN4CYD

UNITED STATES

Vaccines in the Child and Adolescent Immunization Schedule*

Vaccine

Dengue vaccine

Deligue vaccine	DEINICID	Deligvania
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel® Infanrix®
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilus influenzae type b vaccine	Hib (PRP-T) Hib (PRP-OMP)	ActHIB° Hiberix° PedvaxHIB°
Hepatitis A vaccine	НерА	Havrix [®] Vaqta [®]
Hepatitis B vaccine	НерВ	Engerix-B° Recombivax HB°
Human papillomavirus vaccine	HPV	Gardasil 9°
Influenza vaccine (inactivated)	IIV	Multiple
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II°
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra®
	MenACWY-CRM	Menveo®
	MenACWY-TT	MenQuadfi ^o
Meningococcal serogroup B vaccine	MenB-4C	Bexsero*
	MenB-FHbp	Trumenba*
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13°
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23°
Poliovirus vaccine (inactivated)	IPV	IPOL*
Rotavirus vaccine	RV1 RV5	Rotarix ^e RotaTeq ^e
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel ^o Boostrix ^o
Tetanus and diphtheria vaccine	Td	Tenivac° Tdvax™
Varicella vaccine	VAR	Varivax ^e
Combination vaccines (use combination vaccines instead of separa	te injections when ap	propriate)
DTaP, hepatitis B, and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix*
DTaP, inactivated poliovirus, and Haemophilus influenzae type b vaccine	DTaP-IPV/Hib	Pentacel*
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Kinrix ^a Quadracel ^a
DTaP, inactivated poliovirus, Haemophilus influenzae 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/adolescent immunization schedule

Determine recommended

(Table 1)

Determine recommended vaccine by age interval for catch up vaccination

Assess need for additional recommended vaccines by medical (Table 2) condition or other indication

Review vaccine types, frequencies. intervals, and considerations for (Appendix) special situations (Notes)

Review contraindications and precautions for vaccine types

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/ acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American Academy of Pediatrics (www.aap.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), American Academy of Physician Assistants (www.aapa.org), and National Association of Pediatric Nurse Practitioners (www.napnap.org).

(Table 3)

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

Ouestions or comments

Contact 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.

Helpful information

- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: 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
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip-scdm-faqs.html



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Cover Page

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

2022

Vaccines in the Child and Adolescent Immunization Schedule*

Vaccine	Abbreviation(s)	Trade name(s)
	DENACYD	
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilis Influenzae type b vaccine	Hib (PRP-T)	ActHIB*
	Hib (PRP-OMP)	Hiberix* PedvaxHiB*
Hepatitis A vaccine	НерА	Havric ^a Vaqta ^a
Hepatitis 8 vaccine	НерВ	Engerik-B* Recomb Ivax HB*
Human papillornavirus vaccine	HPV	
Influenza vaccine (Inactivated)	IIV	Multiple
Influenza vaccinie (live, attenuated)	LAIV4	FluMist* Quadrivaler
Measles; mumps, and rubella vaccine	MMB	M-M-R 8*
Meningococcal serogroups A. C.W. Y vaccine	MenACWY-D	Menactra*
	MenACWY-CRM	Menveo*
	MenACWY-TT	MehQuadfi*
Meningococcal serogroup B vaccine	MenB-4C	Bexsero*
	MenB-FHbp	Trumenba*
Pneumococcal 13-valent conjugate vaccine	PCV13	Pievnar 13*
Prieumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Poliovirus vaccine (inactivated)	IPV	IPOL*
Rotavirus vaccine	RV1 RV5	RotaTeq*
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel* Boostric*
Tetanus and diphtheria vaccine	FTd	Tenivac* Tdvax**
Vancella vaccine	VAR	
Combination vaccines (use combination vaccines instead of separ	ate injections when ap	propriate)
DTaP, hepatitis B, and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix*
DTaP, inactivated poliovirus; and Huemophilus influenzae type b vaccine	DTaP-IPV/Hib	Pentacel*
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Kinitk* Quadracel*
DTaP, inactivated poliovirus, Haemophilas Influenzae type b, and hepatitis B vaccine	DTaP-IPV-Hib- HepB	Vaxelis*
	MANDY	

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/adolescent immunization schedule

Determine recommended vaccine by age

Determine recommended interval for catchup vaccination (Table 2) Assess need for additional recommended vaccines by medical condition of other indication.

Review vaccine types, frequencies, intervals, and considerations fo special situations (Notes)

Review contraindication and precautions for vaccine type for (Appendix)

Recommended by the Advisory Committee on Immunization Practices (www.odc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American Academy of Pediatrics (www.aap.org), American Academy of Family Physicians (www.aap.org), American College of Ostetricans and Gynecologists (www.acap.org), American College of Nurse-Midwives (www.michwfe.org), American Academy of Physician Assistants (www.aapa.org) and National Association of Pediatric Nurse Practitioners (www.nagnap.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 or 800-822-7967

Questions or comments

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- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: 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
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip-scdm-faqs.html



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Vaccine	Abbreviation(s)	Trade name(s)
	DEN4CYD	
Diphtheria, tetanus, and acellular pertussis yaccine	DTaP	
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilus Influenzae type b vaccine	HID (PRP-T)	ACTHIB!
	Hib (PRP-OMP)	Hiberio [®] PedvaxHiB*
Hepatitis A vaccine	НерА	Havrid Vaqta [®]
Hepatitis B vaccine	НерВ	Engerik-B* Recomb Ivan HB*
Human papillornavirus vaccine	HPV	
Influenza vaccinie ((nactivated)	IIV	Multiple
Influenza vaccine (live, attenuated)	LAIV4	FluMist* Quadrivaler
Measles, mumps, and rubella vaccine	MMB	M-M-R II*
Meningococcal serogroups A. C. W. Y. vaccine	MenACWY-D	Menactra*
	MenACWY-CRM	Menveo*
	MenACWY-TT	MenQuadfi*
Meningococcal serogroup B vaccine	MenB-4C	Bexsero*
	MenB-FHbp	Trumenba*
Pneumocoical 13-valent conjugate vaccine	PCV13	Preynar 13*
Prieumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Poliovirus vaccine (inactivated)	IPV	IPOL®
Rotavirus vaccine	RV1 RV5	RotaTeq*
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel* Boostrix*
Tetanus and diphtheria vaccine	Td	Tenivac* Tdvax***
Vancella vaccine	VAR	

Combination vaccines (use combination vaccines instead of separa	ate injections when a	opropriate)
DTaP, hepatitis B, and inactivated poliovirus vaccine	DTaP-Hep8-IPV	
DTaP, inactivated poliovirus, and Huemophius influenzae type b vaccine	DTaP-IPV/Hib	Pentacel*
DTaP and inactivated policytrus vaccine	DTaP-IPV	Kinnix* Quadracel*
DTaP, inactivated poliovirus, Haemophilas influenzae type b, and hepatitis B vaccine	DTaP-IPV-Hib- HepB	Vaxelis*
Measles, mumps rubella, and varicella vaccine	MMRV	ProQuad*

How to use the child/adolescent immunization







Search

Vaccines site ▼



Advanced Search

Immunization Schedules

CDC > Schedules Home > For Health Care Providers









Table 1. Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

Always make recommendations by determining needed vaccines based on age (<u>Table 1</u>), determining appropriate intervals for catch-up, if needed (<u>Table 2</u>), assessing for medical indications (<u>Table 3</u>), and reviewing special situations (<u>Notes</u>).



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COVID-19 Vaccination

ACIP recommends use of COVID-19 vaccines for everyone ages 12 and older within the scope of the Emergency Use Authorization for the particular vaccine. COVID-19 vaccine and other vaccines may be administered on the same day. See the COVID-19 Vaccine Product Information page for additional information about COVID-19 vaccines authorized for use in the United States.

Table 1. By age

Table 2. Catch-up schedule

Table 3. By medical indications

Schedule Changes & Guidance

Parent-friendly schedule

Resources for health care providers

- <u>8.5"x11" print color</u> [8 pages]
- Compliant version of this schedule

• Vaccines in the Child and Adolescent Immunization Schedule

• Learn how to display current schedules from your website.

Download Schedules App



Vaccine	Abbreviation(s)	Trade name(s)
Dengue vaccine	DEN4CYD	Dengvaxia*
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel* Infantix*
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilus influenzae type b vaccine	Hib (PRP-T)	ActHIB* Hiberix*
	HID (PRP-OMP)	
Hepatitis A.vaccine	НерА	Havrox* Vagta*
Hepatitis B vaccine	HepB	Engerox-B* Recomb wax HB*
Human papillomavirus vaccine	HPV	Gardasil 9 ^a
Influenza vaccine (inactivațed)	TIV	Multiple
Influenza vaccine (live, attenuated)	LAIV4	FluMist* Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II*
Meningococcal serogroups A, C, W, V vaccine	MenACWY-D	Menactra*
	MenACWY-CRM	Menveo*
	MenACWY-TT	MenQuadfi*
Meningococcal serogroup B vaccine	MenB-4C	
	MenB-FHbp	Trumenbas
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13º
Pnéumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Poliovirus vaccine (mactivated)	1PV	IPOL*
Rotavirus vaccine	RV1 RV5	Rotaric* 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 separa	ate injections when ap	propriate)
DTaP hepatitis B, and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediaric*
DTaP, inactivated policytrus, and Haemophilus influenzae type b vaccine	DTaP-IPV/Hib	Pentacel*
DTaP and inactivated pollovirus vaccine	DTaP-IPV	Kinrix* Quadracel*
DTaP, inactivated politovirus, Haemophilus influenzae type b, and hepatitis B vaccine	OTaP-IPV-Hib- HepB	Vaxelis*
Measles, mumps, rubella, and varicella vaccine	MMEV.	ProGuad*

How to use the child/adolescent immunization schedule

Determine recommended vaccine by age

(Table 1)

Determine recommended interval for catchup vaccination (Table 2)

Assess need for additional recommended vaccines by medical condition or other indication (Table 3)

Review vaccine types, frequencies, intervals, and considerations for (Appendix) special situations (Notes)

Review contraindications and precautions for vaccine types





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

NITED STATES

Vaccines in the Child and Adolescent Immunization Schedule*

Vaccine	Abbreviation(s)	Trade name(s)
Dengue vaccine	DEN4CYD	Dengvaxia*
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel® Infanrix®
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilus influenzae type b vaccine	HIb (PRP-T) HIb (PRP-OMP)	ActHIB° Hiberix° PedvaxHIB°
Hepatitis A vaccine	НерА	Havrix® Vaqta®
Hepatitis B vaccine	НерВ	Engerix-B° Recombivax HB°
Human papillomavirus vaccine	HPV	Gardasil 9°
Influenza vaccine (inactivated)	IIV	Multiple
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II°
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra*
	MenACWY-CRM	Menveo*
	MenACWY-TT	MenQuadfi ^o
Meningococcal serogroup B vaccine	MenB-4C	Bexsero*
	MenB-FHbp	Trumenba*
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13°
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23°
Poliovirus vaccine (inactivated)	IPV	IPOL*
Rotavirus vaccine	RV1 RV5	Rotarix ^e RotaTeq ^e
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Tetanus and diphtheria vaccine	Td	Tenivac° Tdvax™
Varicella vaccine	VAR	Varivax ^e
Combination vaccines (use combination vaccines instead of separat	e injections when app	oropriate)
DTaP, hepatitis B, and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix*
DTaP, inactivated poliovirus, and Haemophilus influenzae type b vaccine	DTaP-IPV/Hib	Pentacel®
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Kinrix ^e Quadracel ^e
DTaP, inactivated poliovirus, <i>Haemophilus influenzae</i> type b, and hepatitis B vaccine	DTaP-IPV-Hib- HepB	Vaxelis*

*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.

Measles, mumps, rubella, and varicella vaccine

Determine recommended vaccine by age Determine recommended interval for catch up vaccination Assess need for additional recommended vaccines by medical condition or Review Paccine types, or frequencies, and frequencies intervals, and frequencial situations (Notes)

Review contraindications and precautions for vaccine types (Appendix)

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/ acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov). American Academy of Pediatrics (www.aap.org), American Academy of Family Physicians (www.satp.org). American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), American Academy of Physician Assistants (www.aapa.org) and National Association of Pediatric Nurse Practitioners (www.naprap.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.htm.gov.or.800-822-7967

Questions or comments

Contact www.odc.gov/odc-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.org/vaccines/schedules/https://chedule-app.html

Helpful information

- Complete ACIP recommendations.
- www.irdicingv/vaccings/hcn/acin-racs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-necs/general-recs/index.html
- Vaccine information statements
- www.cdc.gov/vaccines/hcp/vis/index.html
- (including tase identification and outbreak response)
 www.cdc.gov/vaccines/pubs/surv-manual
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip/scdm-fags.html



ProQuad®

U.5. Department of Health and Human Services Centers for Disease Control and Prevention Scan QR code for access to unline schedule

How to use the child/adolescent immunization schedule

¹⁸

Routine Immunization Schedule

Table 1 Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

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).

To determine minimum intervals b	oetween a	oses, see ti	ne catcn-u	p scneaule	(Table 2).												
Vaccine	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
Hepatitis B (HepB)	1 st dose	4 —− 2 nd 0	dose —→		← ——		– 3 rd dose –		+								
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1 st dose	2 nd dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1st dose	2 nd dose	3 rd dose			◄ —— 4 th d	ose——▶			5th dose					
Haemophilus influenzae type b (Hib)			1st dose	2 nd dose	See Notes		<a>3rd or 4rd See N	^{ti} dose <u>,</u> Notes									
Pneumococcal conjugate (PCV13)			1 st dose	2 nd dose	3 rd dose		◄ — 4 th 0	lose—→									
Inactivated poliovirus (IPV <18 yrs)			1 st dose	2 nd dose	← ——		– 3 rd dose –					4 th dose					
Influenza (IIV)							А	nnual vacci	nation 1 or	2 doses			_or_	Annual	vaccination	1 dose on	y
Influenza (LAIV4)												l vaccination r 2 doses		Annual	vaccination	1 dose on	ly
Measles, mumps, rubella (MMR)					See N	lotes	4 1º d	lose —▶				2 nd dose					
Varicella (VAR)							4 1 ^g d	lose —▶				2 nd dose					
Hepatitis A (HepA)					See N	lotes	:	2-dose serie	s, See Note	s							
Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)														1 dose			
Human papillomavirus (HPV)													-	See Notes			
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM ≥2 mos, MenACWY-TT ≥2 years)								See Notes						1st dose		2 nd dose	
Meningococcal B (MenB-4C, MenB-FHbp)															See Note	25	
Pneumococcal polysaccharide (PPSV23)														See Notes			
Dengue (DEN4CYD; 9-16 yrs)													Se	ropositive ir (Se	endemica e Notes)	reas only	
Range of recommended ages for all children		e of recomm tch-up imm			Range of re for certain h					l vaccination is age group			ded based o sion-making			recommer t applicable	

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

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).

o determine minimum intervals b	between d	oses, see ti	ne catch-u	o schedule	(Table 2).												
Vaccine	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 y
Hepatitis B (HepB)	1 st dose	◄ —— 2 rd (dose —-≯		← ——		— 3 rd dose –										
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1 st dose	2 nd dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1st dose	2 nd dose	3™ dose			◄ —— 4 th d	ose——▶			5th dose					
Haemophilus influenzae type b (Hib)			1st dose	2 nd dose	See Notes		4 ^{3rd} or4 See N	^{†i} dose <u>,</u> Notes									
Pneumococcal conjugate (PCV13)			1 st dose	2 nd dose	3 rd dose		◄ —— 4 th 0	lose—→									
Inactivated poliovirus (IPV <18 yrs)			1st dose	2 nd dose	← ——		— 3 rd dose –					4 th dose					
Influenza (IIV)							А	nnual vacci	nation 1 or.	2 doses			_or_	Annua	l vaccination	1 dose onl	y
Influenza (LAIV4)												l vaccination r 2 doses		Annua	l vaccination	1 dose onl	y
Measles, mumps, rubella (MMR)					See I	Notes	4 1¤ d	lose —▶				2 nd dose					
Varicella (VAR)							4 1 ² d	lose —-▶				2 nd dose					
Hepatitis A (HepA)					See I	Notes	1	2-dose serie	s, See Note	5							
Tetanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)														1 dose			
Human papillomavirus (HPV)														See Notes			
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM ≥2 mos, MenACWY-TT ≥2years)								See Notes						1¤ dose		2 nd dose	
Meningococcal B (MenB-4C, MenB-FHbp)															See Note	25	
Pneumococcal polysaccharide (PPSV23)														See Notes			
Dengue (DEN4CYD; 9-16 yrs)													Se		n endemica ee Notes)	reas only	
Range of recommended ages for all children		of recomn tch-up imm	nended age: unization			ecommende high-risk gr				vaccination s age group			ded based o sion-making			recommen t applicable	

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

United States, 2022

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 doese, see the catch-up schedule (Table 2).

To determine minimum intervals b	oetween d	oses, see tl	he catch-u	p schedule	(Table 2).												
Vaccine	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
Hepatitis B (HepB)	1 st dose	◄ —— 2 nd (dose —-▶				– 3 rd dose –										
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1 st dose	2 nd dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1 st dose	2 nd dose	3™ dose			◄ — 4 th d	ose— →			5th dose					
Haemophilus Influenzae type b (Hib)			1st dose	2 nd dose	See Notes		<a>3rd or 4 See N	th dose <u>,</u> Notes									
Pneumococcal conjugate (PCV13)			1 st dose	2 nd dose	3 rd dose		◄ —— 4 th 0	dose—→									
Inactivated poliovirus (IPV <18 yrs)			1 st dose	2 nd dose	4		– 3 rd dose –					4 th dose					
Influenza (IIV)							А	nnual vacci	nation 1 or	2 doses			-or -	Annua	l vaccination	1 dose on	ly
Influenza (LAIV4)												l vaccinatio r 2 doses		Annua	l vaccination	1 dose on	ly
Measles, mumps, rubella (MMR)					See I	Notes	4 1 ^g d	lose —▶				2 nd dose					
Varicella (VAR)							4 1 ^g d	lose —▶				2 nd dose					
Hepatitis A (HepA)					See I	Notes		2-dose serie	s, See Note	s							
Tetanus, diphtheria, acellular pertussis (Tdap ≥ 7 yrs)														1 dose			
Human papillomavirus (HPV)													H 0	See Notes			
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM≥2 mos, MenACWY-TT≥2years)								See Notes						1¤ dose		2 nd dose	
Meningococcal B (MenB-4C, MenB-FHbp)															See Not	es	
Pneumococcal polysaccharide (PPSV23)														See Notes			
Dengue (DEN4CYD; 9-16 yrs)													Se	ropositive i (S	n endemic a ee Notes)	reas only	
Range of recommended ages for all children		of recomn tch-up imm	nended age nunization	s	Range of re for certain	commende high-risk gr				l vaccination is age group			nded based (ision-making			recommer t applicable	

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

United States, 2022

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 doese, see the catch-up schedule (Table 2).

To determine minimum intervals by	oetween d	oses, see tl	ne catch-u	p schedule	(Table 2).												
Vaccine	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
Hepatitis B (HepB)	1 st dose	◄ —— 2 rd (dose —-≯				– 3 rd dose –										
Rotavirus (RV): RV1 (2-dose series), RV5 (3-dose series)			1st dose	2 nd dose	See Notes												
Diphtheria, tetanus, acellular pertussis (DTaP <7 yrs)			1st dose	2 nd dose	3 rd dose			◄ —— 4 th d	ose— →			5th dose					
Haemophilus Influenzae type b (Hib)			1st dose	2 nd dose	See Notes		4 ^{3™} or4 See N	th dose, Notes —▶									
Pneumococcal conjugate (PCV13)			1st dose	2 nd dose	3 rd dose		◄ —— 4 th 0	iose—→									
Inactivated poliovirus (IPV <18 yrs)			1 st dose	2 nd dose	← ——		– 3 rd dose –					4 th dose					
Influenza (IIV)							Α	nnual vacci	nation 1 or.	2 doses			-or-	Annua	l vaccination	1 dose onl	у
Influenza (LAIV4)												l vaccination r 2 doses		Annua	l vaccination	1 dose onl	у
Measles, mumps, rubella (MMR)					See f	lotes	4 1º d	lose —▶				2 nd dose					
Varicella (VAR)							4 1 ^g d	lose —▶				2 nd dose					
Hepatitis A (HepA)					See f	lotes		2-dose serie	s, See Note	s							
Tetanus, diphtheria, acellular pertussis (Tdap ≥ 7 yrs)														1 dose			
Human papillomavirus (HPV)														See Notes			
Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM≥2 mos, MenACWY-TT≥2years)								See Notes						1st dose		2 nd dose	
Meningococcal B (MenB-4C, MenB-FHbp)															See Note	25	
Pneumococcal polysaccharide (PPSV23)														See Notes			
Dengue (DEN4CYD; 9-16 yrs)													S	eropositive i (S	n endemic a ee Notes)	reas only	
Range of recommended ages for all children		of recomn tch-up imm	nended age unization	s	Range of re for certain					vaccination is age group		Recommen clinical deci				recommen t applicable	

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

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). 16 yrs 17–18 yrs Vaccine 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 yr 4—— 2nd dose ——▶ Hepatitis B (HepB) 1st dose – 3rd dose – Rotavirus (RV): RV1 (2-dose 2nd dose See Notes series), RV5 (3-dose series) Diphtheria, tetanus, acellular 1st dose 2nd dose 3™ dose 4— 4th dose ——▶ 5th dose pertussis (DTaP <7 yrs) 3rd or 4th dose, Haemophilus influenzae type b 1st dose 2nd dose See Notes See Notes Pneumococcal conjugate (PCV13) 4th dose —→ 2nd dose 3rd dose Inactivated poliovirus 4th dose 1st dose 2nd dose - 3rd dose ------(IPV <18 yrs) Influenza (IIV) Annual vaccination 1 or 2 doses Annual vaccination 1 dose only • Annual vaccination Influenza (LAIV4) Annual vaccination 1 dose only 1 or 2 doses See Notes Measles, mumps, rubella (MMR) 4—— 1st dose ——▶ 2nd dose Varicella (VAR) 4—— 1st dose ——▶ 2nd dose Hepatitis A (HepA) See Notes 2-dose series, See Notes Tetanus, diphtheria, acellular 1 dose pertussis (Tdap ≥7 yrs) See Human papillomavirus (HPV) Notes Meningococcal (MenACWY-D ≥9 mos, MenACWY-CRM ≥2 mos, See Notes 2nd dose 1st dose MenACWY-TT ≥2years) See Notes Meningococcal B (MenB-4C, MenB-FHbp) Pneumococcal polysaccharide See Notes (PPSV23) Seropositive in endemic areas only Dengue (DEN4CYD; 9-16 yrs) (See Notes) Range of recommended Range of recommended ages Range of recommended ages Recommended vaccination Recommended based on shared No recommendation/ ages for all children for catch-up immunization for certain high-risk groups can begin in this age group clinical decision-making not applicable

Catch-up Immunization Table

Table 2

Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More than 1 month Behind, United States, 2022

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		Minimum Interval Between Doses		
	Dose 1	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose
Hepatitis B	Birth	4 weeks	8 weeks and at least 16 weeks after first dose. minimum age for the final dose is 24 weeks.		
Rotavirus	6 weeks Maximum age for first dose is 14 weeks, 6 days.	4 weeks	4 weeks maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and acellular pertussis	6 weeks	4 weeks	4 weaks	6 months	6 months
Haemophilus influenzae type b	6 weeks	No further doses needed if first dose was administered at age 15 months or older. 4 weeks if first dose was administered before the 1 st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months.	No further doses needed if previous dose was administered at age 15 months or older. 4 weeks if current age is younger than 12 months and first dose was administered at younger than age 7 months and at least 1 previous dose was PRP-1 (Act-Hib, Pentacel, Hiberial, Vaxelis or unknown. 8 weeks and age 12 through 59 months (as final dose) if current age is younger than 12 months and first dose was administered at age 7 through 11 months; OR if current age is 12 through 59 months and first dose was administered before the 14 birthday and second dose was administered at younger than 15 months; OR OR if both doses were PedvaxHIB and were administered before the 1st birthday.	before the 1° birthday.	
Pneumococcal conjugate	6 weeks	No further doses needed for healthy children if first dose was administered at age 24 months or older. 4 weeks 4 first dose was administered before the 1 th birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1 th birthday or after.	No further doses needed for healthy children if previous dose was administered at age 24 months or older. 4 weeks if current age is younger than 12 months and previous dose was administered at <7 months old. 8 weeks (as final dose for healthy children) if previous dose was administered between 7–11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was administered before age 12 months.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
Inactivated poliovirus	6 weeks	4 weeks	4 weeks if current age is -04 years. 6 months (as final dose) if current age is 4 years or older.	6 months (minimum age 4 years for final dose).	
Measles, mumps, rubella	12 months	4 weeks			
Varicella	12 months	3 months			
Hepatitis A	12 months	6 months			
Meningococcal ACWY	2 months MenACWY-CRM 9 months MenACWY-D 2 years MenACWY-TT		See Notes	See Notes	
	,		Children and adolescents age 7 through 18 years		1
Meningococcal ACWY	Not applicable (N/A)	8 weeks			
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis	7 years	4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1 st birthday. 6 months (as final dose) if first dose of DTaP/DT or Idap/Td was administered at or after the 1 st birthday.	6 months if first dose of DTaP/DT was administered before the 1 st birthday.	
Human papillomavirus	9 years	Routine dosing intervals are recommended.	•	,	
Hepatitis A	N/A	6 months			
Hepatitis B	N/A	4 weeks	8 weeks and at least 16 weeks after first dose.		
Inactivated poliovirus	N/A	4 weeks	6 months A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella	N/A	4 weeks			
Varicella	N/A	3 months if younger than age 13 years. 4 weeks if age 13 years or older.			
Dengue	9 years	6 months	6 months		

Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More

than 1 month Behind, United States, 2022

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

Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More

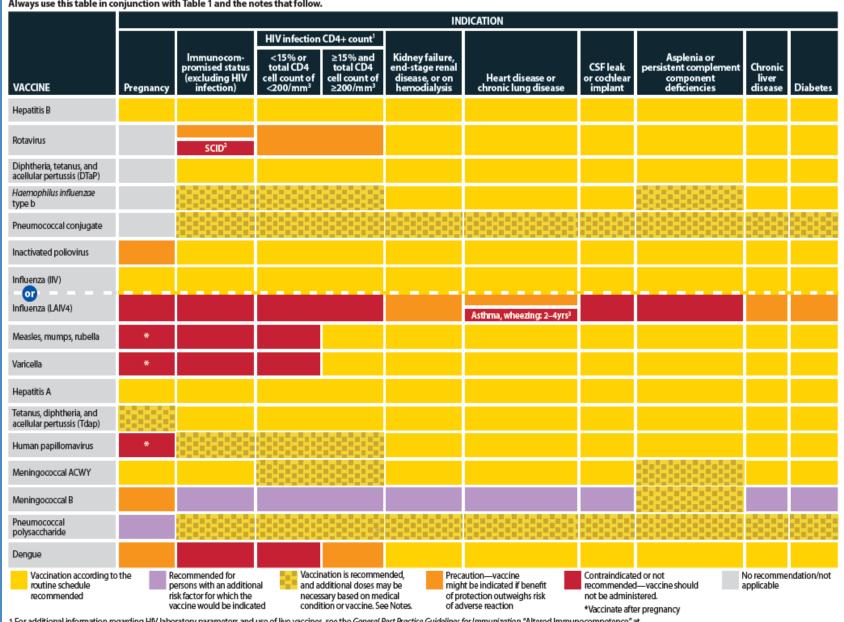
than 1 month Behind, United States, 2022

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 Min	nimum Age for		Minimum Interval Between Doses		
Dos	se 1	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose
Hepatitis B Birti	h	4 weeks	8 weeks and at least 16 weeks after first dose. minimum age for the final dose is 24 weeks.		
Max	eeks ximum age for first se is 14 weeks, 6 days.	4 weeks	4 weeks maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and 6 w acellular pertussis	reeks	4 weeks	4 weeks	6 months	6 months
Haemophilus influenzae 6 w type b	reeks	No further doses needed if first dose was administered at age 15 months or older. 4 weeks if first dose was administered before the 11th strikday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months.	No further doses needed if persions close was administered at age 15 months or older. 4 weeks if current age is younger than 12 months and first dose was administered at younger than age 7 months and at least 1 previous dose was PRPT (ActHib, Pentacel, Hiberiol, Vaxelis or unknown. 8 weeks and age 12 through 59 months (as final dose) if current age is younger than 12 months and first dose was administered at age 7 through 11 months; OR if current age is 12 through 59 months and first dose was administered before the 14 birthday and second dose was administered at younger than 15 months; on if both doses were PedvaxHIB and were administered before the 1st birthday.	8 wooks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before the 1 ^e birthday.	
Pneumococcal conjugate 6 w	reeks	No further doses needed for healthy children if first dose was administered at age 24 months or older. 4 weeks if first dose was administered before the 11 th birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 11 th birthday or after.	No further doses needed for healthy children if previous dose was administered at age 24 months or older. 4 weeks if current age is younger than 12 months and previous dose was administered at <7 months old. 8 weeks (as final dose for healthy children) if previous dose was administered between 7–11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was administered before age 12 months.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
Inactivated poliovirus 6 w	reeks	4 weeks	4 weeks if current age is <4 years. 6 months (as final dose) if current age is 4 years or older.	6 months (minimum age 4 years for final dose).	
Measles, mumps, rubella 12 n	months	4 weeks	- /		
	months	3 months			
Hepatitis A 12 n	months	6 months			
Meningococcal ACWY 2 mx 9 m	nonths MenACWY-CRM nonths MenACWY-D ears MenACWY-TT	8 weeks	See Notes	See Notes	
· ·			Children and adolescents age 7 through 18 years		
Meningococcal ACWY Not	t applicable (N/A)	8 weeks			
Tetanus, diphtheria; 7 ye tetanus, diphtheria, and acellular pertussis		4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1 st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1 st birthday.	6 months if first dose of DTaP/DT was administered before the 1 st birthday.	
Human papillomavirus 9 ye	ears	Routine dosing intervals are recommended.	,		
Hepatitis A N/A	١	6 months			
Hepatitis B N/A	١	4 weeks	8 weeks and at least 16 weeks after first dose.		
Inactivated poliovirus N/A		4 weeks	6 months A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella N/A	l .	4 weeks			
Varicella N/A	1	3 months if younger than age 13 years. 4 weeks if age 13 years or older.			
Dengue 9 ye	ears	6 months	6 months		

Immunization by Medical Indication Table

Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2022



¹ 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 and Table 4-1 (footnote G) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

² Severe Combined Immunodeficiency

³ LAIV4 contraindicated for children 2-4 years of age with asthma or wheezing during the preceding 12 months

Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2022

	INDICATION										
			HIV infection CD4+ count ¹								
VACCINE	Pregnancy	Immunocom- promised status (excluding HIV infection)	<15% or total CD4 cell count of <200/mm³	≥15% and total CD4 cell count of ≥200/mm³	Kidney failure, end-stage renal disease, or on hemodialysis	Heart disease or chronic lung disease	CSF leak or cochlear implant	Asplenia or persistent complement component deficiencies	Chronic liver disease	Diabetes	
lepatitis B											
lotavirus											
Diphtheria, tefanus, and icellular pertussis (DTaP) Hawnophilus influenzasi ype b											
neumococcal conjugate											
nactivated policy/rus											
nfluenza (IIV)											
leasles, mumps, rubella						Asthma, wheezing: 2-4yrs*					
aricella											
epatiris A.											
etanus, diphtheria, and cellular pertussis (Tdap)											
eningococcal ACWY											
leningococcal B											
neumococcal olysacchande											
Vaccination according to no routine schedule recommended		ecommended for ersons with an addition sk factor for which the accine would be indicat		ation is recomme Iditional doses ma ary based on med ion privaccine. Se	ay be mig dical of pi	aution—vaccine it be indicated if benefit otection outwelghs risk Iverse reaction	Contraindicate recommended not be adminited to the second of the second	—vaccine should stered		ndation/not	

For additional information regarding HV laboratory parameters and use of live vaccines, see the General Best Practice Guidelines for Immunization, "Altered Immunocompetence," at www.odc.gov/vaccines shop/acid-des/general-rect/constraindications furni.

Severe Combined Immunodeficiency

ADVA contraindurated for children 2-4 years of age with asthma or wheezing during the preceding 12 months.

Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2022

	INDICATION											
			HIV infection CD4+ count ¹									
VACCINE	Pregnancy	Immunocom- promised status (excluding HIV infection)	<15% or total CD4 cell count of <200/mm³	≥15% and total CD4 cell count of ≥200/mm³	Kidney failure, end-stage renal disease, or on hemodialysis	Heart disease or chronic lung diseas	CSF leal or cochle se implan	ar component	ent Chronic liver disease	Diabete		
Hepatitis B												
Rotavirus		SCID ²										
Diphtheria, tetanus, and acellular pertussis (DTaP)												
Haemophilus influenzae type b												
Pneumococcal conjugate												
Inactivated poliovirus												
Influenza (IIV)						ļ				١		
influenza (LAIV4)						Asthma, wheezing: 2–4	yrs³					
Measles, mumps, rubella	*											
Varicella	*											
Hepatitis A												
Tetanus, diphtheria, and acellular pertussis (Tdap)												
Human papillomavirus	*											
Meningococcal ACWY												
Meningococcal B												
Pneumococcal polysaccharide												
Dengue												
Vaccination according to t routine schedule recommended	the Recommended for persons with an additional risk factor for which the vaccine would be indicated Recommended for persons with an additional doses many condition or vaccine. See		ay be mi	ny be might be indicated if benefit lical of protection outweighs risk		cated or not ded—vaccine should ninistered. after pregnancy	No recommendation/no applicable					

www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html and Table 4-1 (footnote G) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

² Severe Combined Immunodeficiency 3 LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months

Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2022

	INDICATION											
			HIV infection CD4+ count ¹									
VACCINE	Pregnancy	Immunocom- promised status (excluding HIV infection)	<15% or total CD4 cell count of <200/mm³	≥15% and total CD4 cell count of ≥200/mm³	Kidney failure, end-stage renal disease, or on hemodialysis	Heart disease or chronic lung disease	CSF leak or cochlear implant	Asplenia or persistent complement component deficiencies	Chronic liver disease	Diabetes		
Hepatitis B												
Rotavirus		SCID ²										
Diphtheria, tetanus, and acellular pertussis (DTaP)												
Haemophilus influenzae type b												
Pneumococcal conjugate												
Inactivated poliovirus												
Influenza (IIV)												
or Influenza (LAIV4)						Asthma, wheezing: 2–4yrs³						
Measles, mumps, rubella	*					, , ,						
Varicella	*											
Hepatitis A												
Tetanus, diphtheria, and acellular pertussis (Tdap)												
Human papillomavirus	*											
Meningococcal ACWY												
Meningococcal B												
Pneumococcal polysaccharide												
Dengue												
Vaccination according to routine schedule recommended	p ri:	ecommended for ersons with an addition sk factor for which the accine would be indicat	al and a neces	nation is recomme dditional doses m sary based on me tion or vaccine. Se	ay be migl dical of pr	aution—vaccine nt be indicated if benefit otection outweighs risk Iverse reaction	Contraindicate recommended not be admini *Vaccinate aft	d—vaccine should stered.	No recomme applicable	ndation/not		

¹ 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 and Table 4-1 (footnote G) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

² Severe Combined Immunodeficiency 3 LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months

Notes

Notes

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

For vaccination recommendations for persons ages 19 years or older, see the Recommended Adult Immunization Schedule, 2022.

Additional information

COVID-19 Vaccination

COVID-19 vaccines are recommended for use within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. Interim ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/index.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

- Consult relevant ACIP statements for detailed recommendations at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
 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 as age appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see Table 3-1, 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, and Immunization in Special Clinical Circumstances (In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. 3114 ed. Itasca. IL: American Academy of Pediatrics: 201865-1111.
- For information about vaccination in the setting of a vaccinepreventable disease outbreak, contact your state or local health department.
- The National Vaccine Injury Compensation Program (VICP) is a nofault alternative to the traditional legal system for resolving vaccine injury claims. All routine child and adolescent vaccines are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23).
 For more information, see www.hrsa.gov/vaccinecompensation/ index.html.

Dengue vaccination (minimum age: 9 years)

Routine Vaccination

- Age 9 16 years living in dengue endemic areas 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 [weblink pending]

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

Routine vaccination

- 5-dose series at 2, 4, 6, 15-18 months, 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 4th 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.

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 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.
- 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/f9/wr/mm6905a5.htm

Special situations

- Chemotherapy or radiation treatment:
- 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): 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:

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:

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) Recommended Child and Adglescent Immunization Schedule for ages 18 years or younger, United States, 2022

For vaccination recommendations for persons ages 19 years or older see the Recommended Adult Immunization Schedule, 2022.

Additional information

COVID-19 Vaccination

COVID-19 vaccines are recommended for use within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.dc.gov/vaccines/hcp/acip-recs/index.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

- Consult relevant ADP statements for detailed recommendations away with popularizings becomes become.
- For calculating intervals between doses 4 weeks = 28 days. Interval 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 s.4 days before the minimum age or interval are considered valid. Doses of any vaccine administered 25 days eadlier 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 3-1, Recommended and minimum ages and intervals between vaccine doses, in General Best Practice Guidelines for immunization a worked to be vaccined by the propagation and worked to be vaccined by the propagation and the second of the propagation of the propagation and the propagation and the propagation of the propagation and the propagation of the propagation of the propagation and the propagation of the
- Information on travel vaccination requirements and recommendations is available at www.cdc.pov/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
 immunotation at vivow.cdc.govveaccines/hco/acip-recs/general-recs/
 immunocompetence html, and immunization in Special Clinical
 Circumstances (in: Kimberlin DW Brady MT, Jackson MA, Long 55,
 ed. Red Book. 2018 Report of the Committee on Infectious Diseases,
 313 and Itasan II. American Academy of Padiatrics 2018 67-2111.
- Fall information about vaccination in the setting of a vaccinepresentable disease outbreak, contact your state or local health identification.
- * The National Vaccine Injury Compensation Program (ViCP) is a no-fault alternative to the traditional legal system for resolving vaccine injury claims. All routine child and adolescent Vaccines are covered by ViCP except for pneumococcal polysaccharide vaccine (PFSV23). For more Information, see www.hma.gov.vaccine.com/pensation/selse/limit.

Dengue (minime

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> Diphthe vaccina for King

Routh

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Prosp

Retrospectively: A 4" dose that was inadvertently administered a early asage 12 months may be counted if at least 4 months have elapsed since dose 3.

Catch-up vaccination

- Dase 5 is not necessary if dose 4 was administered at age 4 years of older and at least 6 months after dose 3.
- For other carch-un nulcharce see Table 7.

Special situations

Wound management in children less than age 7 years with histors
of 3 or more closes of tetanus-toxicid-containing vaccine. For all
wounds except clean and minor wounds administer DTaP if hote
than 5 years since last dose of tetanus-toxoid-containing vaccine.
For idealled information, see www.cdcggg/mm/w/vdiumes-87/in
or870.2al into.

Hoemophilus influenzae type b vaccination (minimum age: 6 weeks)

Routine vaccination

- ActHIB, Hibertx, Pentacel, or Vaxelis: 4-dose series (3 dose primary series at age 2, 4, and 5 months, followed by a boostel dose) at age 12–15 months!
- Vaxelis is not recommended for use as a booster dose. A differenttib-containing vaccine should be used for the booster dose.
- PedvaxHIB: 3-dose series [2-dose primary series at age 2 and 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 ifinal dose at lear 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;

COVID-19 vaccines are recommended for use within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/index.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

- should be repeated at least 3 months after therapy completion.
- * Hematopoietic stem cell transplant (HSCT)
- 3-dose series 4 weeks appirt starting 6 to 12 months after successful transplant regardless of Hip vaccination history
- Anatomic or functional asplenia (including sickle cell disease) 12-59 months
- Univacionared or only 1 dose before age 12 months: 2 doses.
 8 weeks apart
- Zor more doses before age (2 months:) dose at least 8 weeks after previous dose

Diminiscipated a persons age 5 years or older

dose

Elective splenectomy:

Unvacanated Laersons age 15 months or alder

If dose (preferably at least 14 days before procedure)

* HIV infection:

12-59 months

- Unvaconated or only, I date 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

I Strocomated * persons age 5-18 year

dose

 Immunoglobulin deficiency, early component complement deficiency;

12-59 months

- Univaccinated priority | dose before age |2 months |2 doses, 8 weeks apart
- 2 or more doses before age 12 months: | dose at least 8 weeks after previous dose
- *Univaccinated Less than routine series (through age 14 months) OR no doses rage 15 months or older)

Routine vaccination

- Age 9–16 years living in dengue endemic areas 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 prevaccination laboratory testing
 - For information about ivaccination in the setting of a vaccinepreventable disease outbreak, contact your state or local health department.
 - The Matipinal Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury claims. All routine child and adolescent vaccines are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information, see www.hna.gov.vaccine.compensation in the New York.

Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

Dengue vaccination (minimum age: 9 years)

Routine Vaccination

- Age 9 16 years living in dengue endemic areas 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 [weblink pending]

Diphtheria, tetanus, and pertussis (DTaP) vaccination (minimum age: 6 weeks [4 year for Kinrix or Quadraceii)

Routine vaccination

- 5-dose series at 2.4.6.15-16 months 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" dose that was inadvertently administrated a 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 duldance see Table 2.

Special situations

Wound management in children less than age 7 years with history of 3 or more doses of tetanus-toxold-containing vaccine. For all wounds except clean and minor wounds administer DTaP if hore than 5 years since last dose of tetanus-toxold-containing vaccine. For cletalled information, see www.cdc.gow/mniwr/valumes-37/ii/ms702a | htm.

Hoemophilus influenzoe type b vaccination (minimum age: 6 weeks)

Routine vaccination

- ActHIB, Hiberix, Pentacel, or Vaxelist 4-dose series (3 dose primary series at age 2, 4, and 5 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.
- PédvaxHIB; 3-dose series [2-dose primary series at age 2 and 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 ifinal 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 doses of PedvaxHIB before age 12 months: Administer dose 3 final doser at 12-59 months and at least 8 weeks after dose 2
- 1 dose administered at age 15 months or older; No further dose needed
- Unvaccinated at age 15–59 months: Administer Lidose
- 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 satisfying vaccination in children less than age 5 years. Follow the catch-up satisfying even if Vaxelis is used for one of more doses. For detailed information on use of Vaxelis see www.dcc.gov/mynwi.volumes 65/ww/mm/6890555.html

Special situations

- Chemotherapy or radiation treatment:
- 12-39 months
- Unvacconated anomly I dose before age 12 months: 2 dase; 8 weeks apart
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose

loses administered within 14 days of starting therapy or during therapy. hould be repeated at least 3 months after therapy completion.

* Hematopoietic stem cell transplant (HSCT)

- 3-dosé 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) 12-39 months
- Univaconated or only I dose before age 12 months, 2 doses.
- g weeks obout
- 2 or more doses before age (2 months:) dose at least 8 weeks after previous dose

- Ldose
- invitorinated Lessons age 15 months
- I dose (preferably at least 14 days before procedure)
- * HIV infection:
- Univaconated or only 1 date before age 12 months 2 dates.
 B weeks apart
- 2 or more dose), before age 12 months: 1 dose at least 8 weeks, after previous dose

Stringgingted* persons age 5-18 years

- dose
- Immunoglobulin deficiency, early component complemen deficiency:

12-59 months

- Univaccinated priority | dose before age | 2 months | 2 doses, 8 weeks sport
- 2 or more doses before age 12 months: 1 dose at least 8 weeks after previous dose
- *University and a Less than routine series (through age 14 months) Of na doses rage 15 months or older)

Notes

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

Catch-up vaccination

Revised bullet:

 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

n dengue endemic eblink nearlino!

OTaP) 4 years

arly as age

* Vaccine doses administrated < 4 days before the minimum as

Routine vaccination

Revised bullets

- ActHIB, Hiberix, Pentacel, or Vaxelis: 4dose 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]

early as age 12 months may be counted if at least 4 months have lapsed since dose 3.

Catch-up vaccination

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

Special situations

Wound management in children less than age 7 years with history of 3 or more doses of setanus-toxoid-containing vaccine. For all wounds except dean and minor wounds administer DTAP if more than 5 years since last dose of tetanus-toxoid-containing vaccine. For detailed information, see www.cac.gov minor volumes 67 in 19.

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 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.
- 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

Special situations

• Chemotherapy or radiation treatment:

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): 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:

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:

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) Recommended Child and Adolescent immunization Schedule for ages 18 years or younger, United States, 2022

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/):
- 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)

Birth dose (monovalent HepB vaccine only)

- Mother is HBsAg-negative: 1 dose within 24 hours of birth for all medically stable infants >2,000 grams. Infants >2,000 grams. Administer 1 dose at chronological age 1 month or hospital discharge (whichever It earlier and even if weight is still >2,000 grams).
- . Mother is HBsAg-positive:
- Administer HepB vaccine and hepatitis B immune globulin (HBIG) in separate limbs) within 12 hours of birth, legardless of birth weight. For infants 2,000 grams, administer 3 additional doses of varcine storal of 4 doses; beginning at age. I month.
- Test for HBsAg and anti-HBs at age 9–12 months. If HepB selles is delayed test 1–2 months after final close.
- Mathor's MRs Ameratus is unknown
- Administer HepB vaccine within 12 hours of birth, regardless of birth weight
- For infants < 2,000 grams, administer HBIG in addition to HepB vaccine im separate limbs) within 12 hours of birth. Administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
- Determine mother's HBsAg status as soon as possible. If mother is HBsAg-positive, administer HBIG to infants is 2,000 grams as soon as possible, but no later than 7 days of age.

Routine vaccination

- Revised bullet: 2-dose series (minimum interval: 6 months) at age 12–23 months
- Adolescents age 11–15 years may use an alternative 2-dose schedule with at least 4 months between doses judgit formulation Recombinate HB cmlV.
- Adolescents age 18 years or older may receive a 2-dose series of HebB (HepPisav-B*) at least 4 weeks apart.
- Adolescents age 15 years or older may receive the combined HapA and HapB vaccine. Twintix, as a 3-dose series (0, 1, and a months) of 4-dose series (3 doses at 0, 7, and 21-30 days, followed by a booster dose at 12 months).
- For other catch-up duidance, see Table 2.

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-HE) = 10miU miL is recommended for certain populations, including
- Infants born to HBsAg-positive mothers
- Hemodialysis patients
- Other immunocompromised persons
- For detailed revoccination recommendations, see www.cdc.gov. watchness.had removes your mention each form.

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
- Z- or 3-dose series depending on age at initial vaccination
- Age 9-14 years at initial vaccination. 2-dose series at 6, 6-12 months immimum interval. 5 months: repeat dose if administere too soon.

Age 15 years or older at initial vaccination: 3-dose series at 0. 1-2 months, 5 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 (facility) intervals.

Interrupted schedules: If vaccination schadule is interrupted, the series does not need to be restarted.

Volgaditional dose recommended when any HPV yacque series has seen completed using the recommended dosing intervals.

pecial situations

Immunocompromising conditions, including HIV infection:

History of sexual abuse or assault: Start at age 9 years

Pregnancy: Pregnancy testing not needed before voccination HPV-voccination not recommended until after pregnancy, no refervention needed if vaccinated while prennant.

Influenza vaccination

(minimum age: 6 months [IIV], 2 years [LAIV4], 18 wars (moorphinant influence vaccine, RIV4)

Routine vaccination

- Use any influenza vaccine appropriate for age and health statuannually
- 2 doses, separated by at least 4 weeks, for children age 6, months-8 years who have received fewer than 2 influenza vaccine doses before July 1, 2021, or whose influenza vaccination history is unknown jadminister dose 2 even if the child turns 9 between receipt of dose 1 and dose 2.
- I dose for children age 6 months-8 years who have received at least 2 influenza vaccine deset before link 1, 2021.
- = 1 desp for all parkons area 9 years or older
- For the 2021-2022 season, see www.odc.gov/mrtwy/yolumes/70/tri rs/70/5a1 htm
- Por the 2022-23 season, see the 2022-23 ACIP influence vaccine recommendations.

Special situations

- Egg allergy, hives only: Any influenza vaccine appropriate for age and health status annually
- Egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress) or required epinephine or another emergency medical intervention: see Appendix listing contraindications and precautions
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions.

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

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

Routing vaccination

 2-dose series (minimum interval) à months at age 12-23 months

Catch-up vaccination

- Unvaccinated persons through age 16 years should complete a 2-dose series (minimum interval: 6 months).
- Persons who previously received 1 dose at age 12 months or cider 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, Twintik 1 as a 3-dose series 10, 1, and 5 months) or 4-dose series 13 doses at 0.7, and 21–30 days, followed by a boosser dose at 12 months.

International trave

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

Hepatitis B vaccination (minimum age: birth)

Birth dose (monovalent HepB vaccine only)

- Mother is HBsAg-negative: 1 dose within 24 hours of birth for all medically stable infants ≥2,000 grams. Infants <2,000 grams: Administer 1 dose at chronological age 1 month or hospital discharge (whichever is earlier and even if weight is still <2,000 grams).
- Mother is HBsAg-positive:
- Administer HepB vaccine and hepatitis B immune globulin (HBIG) (in separate limbs) within 12 hours of birth, regardless of birth weight. For infants <2,000 grams, administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
- Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.
- Mother's HBsAg status is unknown:
- Administer HepB vaccine within 12 hours of birth, regardless of birth weight.
- For infants <2,000 grams, administer HBIG in addition to HepB vaccine (in separate limbs) within 12 hours of birth. Administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
- Determine mother's HBsAg status as soon as possible. If mother is HBsAg-positive, administer HBIG to infants ≥2,000 grams as soon as possible, but no later than 7 days of age.

Routine series

- 3-dose series at 0, 1–2, 6–18 months (use monovalent HepB vaccine for doses administered before age 6 weeks)
- Infants who did not receive a birth dose should begin the series as soon as feasible (see Table 2).
- Administration of 4 doses is permitted when a combination vaccine containing HepB is used after the birth dose.
- Minimum age for the final (3rd or 4th) dose: 24 weeks
- Minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks (when 4 doses are administered, substitute "dose 4" for "dose 3" in these calculations)

Catch-up vaccination

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, 6 months.
- 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 or older may receive a 2-dose series of HepB (Heplisav-B*) at least 4 weeks apart.
- 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).
- For other catch-up guidance, see Table 2.

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 < 10mlU/mL) is recommended for certain populations, including:
- Infants born to HBsAg-positive mothers
- Hemodialysis patients
- Other immunocompromised persons
- For detailed revaccination recommendations, see www.cdc.gov/ vaccines/hcp/acip-recs/vacc-specific/hepb.html.

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 sect)

- Age 15 years or older at initial vaccination, 3-dose series at 0, 1–2 months, 6 months infinimum intervals, dose 1 to dose 2.4 weeks / dose 2 to dose 3.12 weeks / dose 1 to dose 3.5 months (speat dose) fadministered too soon)
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV yaccine series has been completed using the recommended dosing intervals.

Special situation:

- Immunocompromising conditions, including HIV infection: 3-dose selies regardless of age at initial vaccination
- History of sexual abuse or assault: Start at ode 9 years.
- Pregnancy: Pregnancy testing not needed before vaccination; HPV vaccination not recommended until after pregnancy; no Intervention needed if vaccinated while pregnant.

Special situations

 Revised bullet: Post-vaccination serology testing and revaccination

(if anti-HBs < 10mlU/mL) is recommended for certain populations, including:

- -Infants born to HBsAg-positive mothers
- -Hemodialysis patients
- -Other immunocompromised persons For detailed revaccination recommendations, see www.cdc.gov/vaccines/hcp/acip-recs/vaccspecific/hepb.html.

Hepatitis (minimum

Routine va

* 2-dose series

Catch-up v

- Univaccinates 2-dose series
- Persons who should receiv
- Adolescents and RepB val or 4-dose sen boosser dose

Internatio

- * Persons trave intermediate
- Infants age with 2 dase:
- Unvaccinat

Hepatitis (minimum

Birth dos

- Mother is HBsAg-negative: 1 dose within 24 hours of brith for all medically stable infants =2,000 grams. Infants =2,000 grams Administer: 1 dose at chronological age 1 month or hospital discharge (whichever is earlier and even if weight is still <2,000 grants).
- Mother is HBsAg-positive
- Administer HepB vaccine and hepatitis 8 immune globulin (HBIG) (in separate limbs) within 12 hours of birth, regardless of birth weight. For infants < 2,000 grams, edminister 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
- Test for HBsAg and anti-HBs at age 9-12 months if Hep8 series is delived test 1-2 months after final date.
- 1 Mother's HBsAg status is unknown:
- Administer Hep8 vaccine within 12 hours of birth, regardless of birth weight.
- For infants = 2,000 grams, administer HBIG in addition to HepB vaccine (in separate limbs) within 12 hours of birth. Administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.

Determine mother's HBsAg status as soon as possible, if mother is HBsAg-positive, administer HBIG to Infants > 2,000 grams as soon as possible but no later than 7 days of age.

Routine and catch-up vaccination

• Revised bullet: No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Special situations

- Revised bullet: Immunocompromising conditions, including HIV infection: 3-dose series regardless of age at initial vaccination
- Revised bullet: **Pregnancy:** Pregnancy testing not needed before vaccination; HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant
 - Post-vaccination serology testing and revaccination if anti-ob-10milum in recommended for certain populations, including
 - Hemodialysis nationts
 - Other immunocompromised persons
 - For detailed revactination recommendations, see www.cla.gov. vaccines has isolorises vaccing define head limit.

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)
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted.
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Special situations

- İmmunocompromising conditions, including HIV infection:
 3-dose series regardless of age at initial vaccination
- 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

nfluenza vaccination

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

Routine vaccination

- * Use any influenza vaccine appropriate for age and health statul annually:
- 2 doses, separated by at least 4 weeks, for children age 6 months 8 years who have received fewer than 2 influenza, vaccine doses before July 1, 2921, or whose influenza vaccination history is unknown ladminister dose 2 even if the child turns 9 between receipt of dose 1 and dose 2.
- I dose for children age 6 months-8 years who have received at least 2 influenza vaccine doses before July 1, 2021
- I dose for all persons age 9 years or older
- For the 2021-2023 season, see WWW.coc.gov/mmw//volumes/70/() in7005a11html
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccing recommendations.

Special situations

- Egg allergy, hives only. Any influenza vaccine appropriate for agreed health status annually.
- Egg allergy with symptoms other than hives (e.g., angioedemic) respiratory distress or required epinephrine or another emergency medical intervention; see Appendix listing contraindications and precautions.
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine; see Appendix listing contraindications and piecautions

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

Hepatitis A vaccination

(minimum age: 12 months for routine vaccination)

Routine vaccination

 2-dose series imminium interval: 6 months at age 12-23 months

Catch-up vaccination

- Unvaccinated persons through age 18 years should complete a 2-dose series iminimum Interval: 6 months.
- Persons who previously received 1 dose stage 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 HepAand HepB vaccine Twinkix", as a 3-dose series (8, 1, and 6 months).

Routine series

- 3-dose series at 0, 1–2, 6–18 months (use monovalent HepB vaccing for doses administered before age 6 weeks)
- Infants who did not receive a birth dose should begin the series as soon as feasible (see Table 2).
- Administration of 4 doses is permitted when a combination vacane containing HepB is used after the birth dose.
- Minimum age for the final (3" or 4") doze 24 weeks
- Minimum intervals: dose 1 to dose 2.4 weeks, dose 2 to dose 3:8 weeks, dose 1 to dose 3:16 weeks, when 4 doses are administered substitute dose 4 for dose 3 in these calculations.

Catch-up vaccination

Unvaccinated persons should complete a 3-dose series at 0, 1-2, 6

- Age 15 years or older at initial vaccination: 3-dose series at 0.1-2 months, 5 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.
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted.
- No additional dose recommended when any HPV yaccine series has been completed using the recommended dosing intervals.

special situations

- Immunocompromising conditions, including HIV infection 3-dose series regardless of age at initial vaccination
- History of sexual abuse or assault: Start at age 9 year
- 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:
- 2 doses, separated by at least 4 weeks, for children age 6 months-8 years who have received fewer than 2 influenza vaccine doses before July 1, 2021, or whose influenza vaccination history is unknown (administer dose 2 even if the child turns 9 between receipt of dose 1 and dose 2)
- 1 dose for **children age 6 months—8 years** who have received at least 2 influenza vaccine doses before July 1, 2021
- 1 dose for all persons age 9 years or older
- For the 2021-2022 season, see www.cdc.gov/mmwr/volumes/70/rr/ rr7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

Special situations

- Egg allergy, hives only: Any influenza vaccine appropriate for age and health status annually
- Egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: see Appendix listing contraindications and precautions
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions

Special situations

- Revised bullet: Egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: see Appendix listing contraindications and precautions
- Revised bullet: Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions

Deleted bullets:

- Severe allergic reactions to vaccines can occur even in the absence of a history of previous allergic reaction. All vaccination providers should be familiar with the office emergency plan and certified in cardiopulmonary resuscitation.
- **LAIV4 should not be used** in persons with the following conditions or situations:

Measles, mumps, and rubella vaccination (minimum age: 12 months for routine vaccination)

Routine vaccination

- 2-dose series at 12–15 months, 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.
- Minimum interval between MMRV doses: 3 months

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 highrisk 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

Routine vaccination

Added bullet: MMR or MMRV may be administered*

Added: *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

Added bullet: Minimum interval between MMRV doses: 3 months

endations for groups listed.

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

Measles, mumps, and rubella vaccination (minimum age: 12 months for routine vaccination)

Routine vaccination

- 2-done series at 12-15 months: 4-6 years
- MMR or MMRV may be administered

"Mare: For dose I in children age 12-47 months, it is recommended to administer MMR and vericells vaccines securately. MMRV may be used if parents or carradivers expresses perference.

Catch-up vaccination

- Unvaccinated children and adolescents: 2-dose series at least 4 weeks abort.
- The majornum age for use of MMRV is 12 years

Special situations

International trave

- Infants age 6–11 months: 1 dose before departure, revaconate with 2-dose series at age 12–15 months (12 months for smildren in highrisk areas) and dose 2 as early as 4 weeks later.
- Unvaccinated children age 12 months or older: 2-dose series of least 4 weeks again before departure.

Meningococcal serogroup A,C,W,Y vaccination (minimum age: 2 months [MenACWY-CRM, Menveo], 9 months [MenACWY-D, Menactra], 2 years [MenACWY-TT, MenQuadfi])

Routine vaccination

2-dose series at 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 8 weeks: 4-dose series at 2, 4, 6, 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

Menactra

- Persistent complement component deficiency or complement inhibitor use:
- Age 9–23 months: 2-dose series at least 12 weeks apart
 Age 24 months or older: 2-dose series at least 8 weeks apart
- Anatomic or functional asplenia, sickle cell disease, or HIV infection:
- Age 9–23 months: Not recommended
- · 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

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

- Children less than age 24 months:
- Menveo (age 2–23 months)
- Dose 1 at age 8 weeks: 4-dose series at 2, 4, 6, 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)

Menactra (age 9-23 months)

- 2-dose series (dose 2 at least 12 weeks after dose 1; dose 2 may be administered as early as 8 weeks after dose 1 in travelers)
- Children age 2 years or older: 1 dose Menveo, Menactra, or MenOuadfi

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, Menactra, or MenQuadfi

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 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.

Note: Menactra should be administered either before or at the same time as DTaP. MenACWY vaccines may be administered simultaneously with MenB vaccines if indicated, but at a different anatomic site, if feasible.

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.

Meningococcai serogroup B vaccination (minimum age: 10 years [Men8-4C, Bexsero Men8-FHbp, Trumenba])

Shared clinical decision-making

- Adolescents not at increased risk age 16-23 years (preferred age)
 16-18 years (preferred age)
- 16-18 years) based on shared clinical decition-mailing.
- Trumenba: 2-dose (eries at least 6 months apart, if dose 2 till administered earlier than 6 months administer a 3rd dose at least 4 months after dose 2.

Special situations

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

- beitsero; 2-dose senes atteast i month apa
- immenba: 3-dose senes at 0 !- 1 6 mont

Note: Bexsero and Trumenbalare not interchangeable, the same product should be used for all doses in a serial.

For Men's booster dose recommendations for groups listed under "Special situations" and in an authreak setting and additional meningooccal vocationation information, see www.dd.gav.timwi.

Pneumococcal vaccination

minimum age: 6 weeks [PCV13], 2 years [PPSV23])

Routine vaccination with PCV13

4-dose series at age 2:4 E | 12-15 month

Catch-up vaccination with PCVT.

- I dose for healthy children age 24–59 months with any incomplete PCV13 series
- For other catch-up guidance, see Table 2

Special situations

Underlying conditions below: When both PCV13 and PPSV23 are ndicated, administer PCV13 first. PCV13 and PPSV23 should not see administered during same visit.

Chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma treated with high-dose, oral corticosteroids); diabete mellitus:

HOS SHO YEAR

Any incomplete" series with

- 3 PCV13 doses: I dose PCV13 (at least 8 weeks after any prior PCV13

than 3 PCV IS doing 2 doings PCV IS 18 years after the most

Special situations

Revised note: Menactra should be administered either before or at the same time as DTaP. MenACWY vaccines may be administered simultaneously with MenB vaccines if indicated, but at a different anatomic site, if feasible.

Notes

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

Sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiency; HIV infection; chronic renal failure; nephrotic syndrome; malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and other diseases associated with treatment with immunosuppressive drugs or radiation therapy; solid organ translations that the most of the constant of th

Series containing oral polio vaccine (OPV), either inixed OPV-PV or OPV-pnly 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/mmw/walumes/do/wr/mms63168.htmls =27 add=mns63165_w.

Only timalent OPV (tOPV) counts toward the U.S. vaccination

Routine vaccination

- Added bullet: VAR or MMRV may be administered*
- Added: *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.
- Revised bullet: 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)

Catch-up vaccination

 Revised bullet: Age 7–12 years: routine interval: 3 months (a dose inadvertently administered after at least 4 weeks may be counted as valid)

In the tist o months of life, use minimum ages and intervals only.

• (PV is not fourtinely recommended for U.S. residents age 18 years or older

Catch-up vaccination

- Adolescents age 13-18 years who have not received Tdap: I dose Tdso, then Td or Tdso booster every 10 years
- Persons age 7–18 years not fully vaccinated with OTaP I doze.
 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
- Children age 7–9 years who receive Idap should receive the routine Idap dose at age 11–12 years.
- Children age 10 years who receive Tdap do not need the routine Tdap dose of age 11-12 years.
- DTaP inadvertently administered on or after age 7 years
- Children age 7-9 years: DTaP may count as part of catch-up age; Administration out in Edge dose at one 111-12 years
- Children age 10–18 years: Count dose of DTaP as the adolescent Tdap booster
- 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 retanus-toxold-containing vaccine. For clean and minor wounds, administer Tdap or Td if more than 10 years since last dose of tetanus-toxold-containing vaccine, for all other wounds, administer Tdap or Td if more than 5 years since last dose of tetanus-toxold-containing vaccine. Tdap is preferred for persons age 11 years or older who have not previously received Tdap or whose Tdap history to unknown if a tetanus-toxord-containing vaccine is indicated for a pregnant adolescent, use Tdap.
- For detailed information, see www.cdc.gcv.mmvmvolumes.edworkme90335 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 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 4weeks 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) 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

Contraindications and precautions

Appendix

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

Adapted from Table 4-1 in Advisory Committee on Immunization Practices (ACIF) General Best Practice Guidelines for Immunization-Contraindication and Precautions available at www.cdc.gov/vaccines/hcp/actp-recs/general-recs/contraindications.html and ACIP's Recommendations for the Prevention and Control of 2021-22 seasonal influenza with Vaccines available at www.cdc.gov/mmwr/volumes/70/m/n7005a1.htm

Interim clinical considerations for use of COVID-19 vaccines including contraindications and precautions can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html			
Vaccine	Contraindications ¹	Precautions ²	
Desgue (DEN4CYD)	 Savere allergit mection (e.g., amaphylasti) after a previous dose or to a vaccitive component? Savere invariancialisticacy) (e.g., ferenticogic and solid turnon, receipt of chemotherapy, congenital immunodeficiency, long-terminmunosuppressive therapy or patients with HM infection who are severely immunocomportated). 	Tragnancy Hit Infaction without evidence of severe immunosuppression Moderate or severe acute illness with or without lever	
Diphtheda, istanus, perhasis (Disi ^a) Istanus, diphtheria (DI)	 Saveres allerejs: maction (n.g., amaphylants), after a previous dose or to a vaccine component? For Diafr orby: Encephalipathy (n.g., come, decisional inveil of conscisuarious, probinged solutions) not attributable to another identifiable cause within 7 days of administration of previous dose of DTP or DTa? 	 Cutilists-Baret syndrome (CDD) within to weeks after prestous dose of Internal record containing section. Interloy of Arthur hype hypernessibility reactions after a previous dose of the property of the property of the property of the property of the last fortunal dose of different sections until at least 10 years have elapsed since the last fortunal-record- containing section. Medicate or severe acute filmes with or without fewer in the property of th	
Namophiku inflamase type b (Hb)	 Severe allergic reaction (e.g., anaphylath) after a previous dose or to a vaccine correponent¹. For Hilberts, Act Hilb, and Nichest Hilb only. History of severe allergic reaction to dry natural latex. Age 42 weeks. 	Moderate or severe acute films with or without fever	
Hepatitis A (HepA)	 Severe allergic mection (e.g., anaphylasts) after a provious dose or to a vaccine component¹ including recornicin 	Moderate or severe acute films with or without fewer	
Hepatith 5 (Nept)	Severe allergic mection (e.g., anaphylacti) after a previous dose or to a vaccine component ¹ including years	Moderate or severe acute films with or without lever Moderate or severe acute films with or without lever	
Hepatitis A-Hepatitis 8 vaccine (HepA- Hep8, (Twinste ⁴)) Human papillomavina (HPV)	 Severe allergic reaction (e.g., anaphylasti) after a previous dose or to a vaccine component² including recorded and years Severe allergic reaction (e.g., anaphylasti) after a previous dose or to a vaccine component² 	Moderate or severe acute liness with or without lever Moderate or severe acute liness with or without lever	
Influenza, egg-based, tractitusted injectable (ISA)	 Severe allergic reaction (e.g., anaphylants), after previous dose of any influenza vaccine (us., any egg-based fit, cats), (inc. of ANV of any valency) Severe allergic reaction (e.g., anaphylants) to any vaccine componental inscluding egg) 	 Guillain-Baret syndomes (2003) within 6 weeks after a previous close of any type of influence vectors in the property of the control of the property of the prope	
Influenza, cell culture-based inactivated injectable [Incliviii, Fluceleux* Quadrivalent]	Severe allengt: mexition (e.g., anaphylasts) to any colls of any valency, or to any component of collection less than age 2 years.	type of influency vaccing. Finance with a failtary of severe allergic maction (e.g., anaphyliciti) after a provious dose of any seg-based M, FM, or LAV of any valency, if using cdM, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic mactions. May consult an allergic	
Influenza, recombinant injectable [SWV9], Flublish* Quadrivalent]	Severe allergic mection (e.g., anaphylasts) to any RM of any valency, or to any component ^a of 2014 Less than age 18 years.	 Cultural notation synchronic scale of the section long, among the control of the city type of influenza succions of the section long, among the section long, among the section long, among the section long and the control of the section long the section who can recognize and manage severe allergic reactions. May consult an allergia. 	
Influenza, bee atternanced J.AVV.	Severe allerate resistion (e.g., amphylants), after previous dose of any influenza vaccine (i.e., any apply and (if. cats). With critical values (if. cats) and cats of the control of the cats of the	 Moderate or severe acute three with or without levier. Califain: Faired syndroms (CET) within 6 weeks after a previous done of any type of influence vectors; second or older. Process with edg allengy with symptoms other than these (e.g., angloederra, respiratory distinue) or inquired spiraephrine or arother emergency modical intervention. Any influence vectors appropriate for age and fleebit status may be administrated from the control of the	
Messler, mumps, rubelle (MME)	 Severe allered: registion (e.g., amplifylatels) after a provious done or to a vegotive component's Severe intrafunction/control (e.g., the control of the control	Recent (c11 months) receipt of artifloody-containing blood product (specific Interval depends on product) History of thrombox (specific or thromboxy) openic purpurs History of thrombox (specific or interferon-garrens release-ususy (CRA) testing Moderate or severe-acute films with or without fewer	
Meningococcal ACWY (MenACWY) MenACWY-CRM (Menuec*); MenACWY-C (Menuec*); MenACWY-T (MenQuadir*)]	 Severe allergic reaction (e.g., anaphylasti) alter a previous done or to a vacche component³. For MenACMY-O and Men ACMY-Older only, severe allergic reaction to any diphthesis toxidion (CRMTST-containing stoccine). For MenACMY-ST only nevers allergic reaction to a tetansa toxicid containing vaccine. 	For MenACWY-CRW only: Proteom birth files than age 9 months Moderate or severe acute liness with or without lever	
Meningococcal 5 (Men5) [Men5-40 (Securo); Men5-41 (Sp (Trumenba)]	 Severe allergic reaction (e.g., anaphylants) after a previous dose or to a vaccine-correponent² 	Transparancy For Manet AC only: Lates sensitivity Moderate or severe acute films with or without fever	
Preumococcal conjugate (PCV13)	 Severe allergic mection (e.g., anaphylasti) after a previous dose or to a vaccine component? Severe allergic mection (e.g., anaphylasti) to any diphtheria toxici6- containing vaccine or its component. 	Moderate or severe acute filters with or without fever	
Preumococcal polysacchaede (PTSACCI)	 Severe allergic reaction (e.g., anaphylants) after a previous dose or to a vaccine component? 	Moderate or severe acute illness with or without fever	
Policytrus vaccine, inactivated (PV)	 Severe allergic reaction (e.g., anaphylasts) after a previous dose or to a vaccine component.¹ 	Programmy Moderate or severe acute illness with or without lever	
Rotavirus (RV) (RV1 (Rotaris), RV5 (Rotafieq))	 Savere allergic resistoring, enaphylicati after a previous dose or to a vaccine-correponent? Savere correlated immunoclefic lensy (SCID) History of intususception 	Although Immunicating element of the fluid SCID Cheesis gustnotines that disease Spring bifude or bladder eastrophy Moderate or sweet suctor filmous with or without fever	
Intarus, diphthwis, and acollular portugnis (filips) Intarus, diphthwis (Rž)	 Saverer allergic mection (e.g., amplyfulant); after a previous dose or to a vaccine component? For Tolay only Except belong partiy (e.g., correct, document) lessed of conscious areas, protocoged sets amply not attributable to another identifiable cause within 7 days of administration of previous close of OTY, Dilar, or Telay 	 Guillain-Barth syndrome (GEG) within its weeks after a previous dose of totaxus lessed -containing section. Hattory of Arthus Hype Inguismentativity machines after a previous dose of the property of the section of the section of the section of the selectivities on the section of the section of the section of the containing section. Moderate or severe acute filters with or without lever or programme or programme or unstable resurrispictual deserver regimen has been assumed, or programme or maphaloguethy until a towarment regimen has been 	
Varicella (VAR)	 Severe allerate resistant jog, amphyliately after a provious does or to a septim component? Severe intracode/secony jog, fernaturationage and odd tumon, receipt of chemotheleapy, congrettal immunode/sciency, targ-term immunosuppressive theoapy or patients with HM infection who are severely immunocomponents.) Programcy Seartify history of altered immunocomponence, unless werefind clinically or by laboratory testing as immunocomposited. 	Recent (c) 1 may the inexist of artibody-containing blood product (specific interval desperation product) Receipt of specific artificial drugs (acyclove), famicidevit, or valacyclove), 24 hours before vaccination (vectof use of these artificial drugs for 14 days after Use of applith or apirity-containing products Moderate or sower acute flessor with or without finese.	
2 When a new a fine is new and warning	vaccine should NOT be administrated Xxoger A, Behta L, Hunter P. ACP General Best Practice Guide sittes should generally be deferred but might be indicated if the benefit of protection from the vaccine strategies and some containable term should be remarkation, www.cdc.gov/vaccines/hopsis-p-eccignessal-eccytostesis-black term should be when there black blackgrov/approved-products/vaccines-licensed-use-united-states external tool.	tours transition that the for an advance marting Engage & Baltin Litherton P.ACP	



Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

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 available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html and ACIP's Recommendations for the Prevention and Control of 2021-22 seasonal influenza with Vaccines available at www.cdc.gov/mmwr/volumes/70/rr/rr7005a1.htm

Interim clinical considerations for use of COVID-19 vaccines including contraindications and precautions can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html

Vaccine	Contraindications ¹	Precautions ²
Influenza, egg-based, inactivated injectable (IIV4)	 Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency) Severe allergic reaction (e.g., anaphylaxis) to any vaccine component3 (excluding egg) 	 Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine Persons with egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. Moderate or severe acute illness with or without fever



Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

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 available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html and ACIPs Recommendations for the Prevention and Control of 2021-22 seasonal influenza with Vaccines available at www.cdc.gov/mmwr/volumes/70/rr/r/700551.htm

Interim clinical considerations for use of COVID-19 vaccines including contraindications and precautions can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html

Vaccine	Contraindications ¹	Precautions ²
Influenza, egg-based, Inactivated Injectable (IIV4)	Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency) Severe allergic reaction (e.g., anaphylaxis) to any vaccine component3 (excluding egg)	Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine Persons with egg allergy with symptoms other than hives (e.g., angloedema, respiratory distress) or required epinephrine or another emergency medical intervention: Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. Moderate or severe acute illness with or without fever
Influenza, cell culture-based inactivated injectable ((ccilv4), Flucelvax* Quadrivalent)	Severe allergic reaction (e.g., anaphylaxis) to any ccilV of any valency, or to any component ³ of ccilV4 Children less than age 2 years.	 Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine 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. Moderate or severe acute illness with or without fever
Influenza, recombinant Injectable ([RIV4), Flublok* Quadrivalent]	Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component ³ of RIV4 Less than age 18 years	 Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg- based IIV, ccilV, 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. Moderate or severe acute illness with or without fever
Influenza, live attenuated [LAIV4, Flumist* Quadrivalent]	Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency) Severe allergic reaction (e.g., anaphylaxis) to any vaccine component ^a (excluding egg) Children less than age 2 years Children age 2 – 4 years with a history of asthma or wheezing Anatomic or functional asplenia Immunocompromised due to any cause including, but not limited to, medications and HIV infection Close contacts or caregivers of severely immunosuppressed persons who require a protected environment Pregnancy Cochlear implant Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear or any other cranial CSF leak Children and adolescents receiving aspirin or salicylate-containing medications 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.	Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza waccine Asthma in persons aged 5 years old or older Persons with egg allergy with symptoms other than hives (e.g., angloedema, respiratory distress) or required epinephrine or another emergency medical Intervention: Any influenza vaccine appropriate for age and health status may be administered. If using LAIV4 (which is egg based), administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. 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)] Moderate or severe acute illness with or without fever

- 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
- 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
- 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-unitedstatesexternal icon.

Recommended Child and Adolescent Immunization Schedule for ages 18 years or Appendix younger, United States, 2022 Contraindications Dengue (DEN4CYD) Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Pregnancy HIV Infection without evidence of severe immunosuppression Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of Moderate or severe acute illness with or without fever chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised) Diphtheria, tetanus, pertussis (DTaP) Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Guillain-Barré syndrome (GBS) within 6 weeks after previous dose Tetanus, diphtheria (DT) of tetanus-toxoid-containing vaccine For DTaP only: Encephalopathy (e.g., coma, decreased level of consciousness, History of Arthus-type hypersensitivity reactions after a previous prolonged seizures) not attributable to another identifiable cause within 7 days dose of diphtheria-toxoid—containing or tetanus-toxoid containing vaccine; defer vaccination until at least 10 years have of administration of previous dose of DTP or DTaP elapsed since the last tetanus-toxold-containing vaccine Moderate or severe acute illness with or without fever. For DTaP only: Progressive neurologic disorder, including infantile spasms, uncontrolled epilepsy, progressive encephalopathy; defer DTaP until neurologic status darified and stabilized Haemophilus Influenzae type b (Hlb) Moderate or severe acute illness with or without fever Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component . For Hibertx, Acti-lib, and Pedvaxi-liB only: History of severe allergic reaction to Age <6 weeks Hepatitis A (HepA) . Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Moderate or severe acute liness with or without fever. component³ including neomycin . Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Hepatitis B (HepB) Moderate or severe acute illness with or without fever component³ including yeast Hepatitis A-Hepatitis B vaccine Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Moderate or severe acute illness with or without fever [HepA-HepB, (Twinrix*)] component² including neomycin and yeast Human papillomavirus (HPV) Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Moderate or severe acute liness with or without fever Measles, mumps, rubella (MMR) Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine. Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product) component Severe Immunodeficiency (e.g., hematologic and solid tumors, receipt of History of thrombocytopenia or thrombocytopenic purpura chemotherapy, congenital immunodeficiency, long-term immunosuppressive Need for tuberculin skin testing or interferon-gamma release assay therapy or patients with HIV infection who are severely immunocompromised) Pregnancy Moderate or severe acute illness with or without fever Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent Meningococcal ACWY (MenACWY) · Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine For MenACWY-CRM only: Preterm birth If less than age 9 months [MenACWY-CRM (Menveo*); component³ For MenACWY-D and Men ACWY-CRM only: severe allergic reaction to any Moderate or severe acute illness with or without fever MenACWY-D (Menactra*): MenACWY-TT (MenQuadfi*) dightheria toxoid- or CRM197-containing vaccine For MenACWY-TT only: severe alleroic reaction to a tetanus toxoid-containing. Meningococcal B (Menil) [Menil-4C (Bexsero); · Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Pregnancy For MenB-4C only: Latex sensitivity component Men8-FHbp (Trumenba)] Moderate or severe acute lilness with or without fever Pneumococcal conjugate (PCV13) . Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Moderate or severe acute illness with or without fever component Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid—containing vaccine or its component² Pneumococcal polysaccharide . Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Moderate or severe acute illness with or without fever (PPSV23) component Pollovirus vaccine, Inactivated (IPV) Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine. Moderate or severe acute illness with or without fever Rotavirus (RV) [RV1 (Rotartx), Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine. Altered Immunocompetence other than SCID RV5 (RotaTed)1 component? Chronic nastrointestinal disease Severe combined Immunodeficiency (SCID) Spina bifida or bladder exstrophy Moderate or severe acute liness with or without fever History of intussusception Guillain-Barré syndrome (GBS) within 6 weeks after a previous Tetanus, diphtheria, and acellular Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine. pertussis (Tdap) Tetanus, diphtheria (Td) component dose of tetanus-toxoid-containing vaccine History of Arthus-type hypersensitivity reactions after a previous For Tdap only: Encephalopathy (e.g., coma, decreased level of consciousness. prolonged seizures) not attributable to another identifiable cause within 7 days dose of diphtheria-toxoid—containing or tetanus-toxoid—

When a contraindication is present, a vaccine should NOT be administered. Knoger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html

of administration of previous dose of DTP, DTaP, or Tdap

component^o

Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine.

 Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive

Family history of attered immunocompetence, unless verified clinically or by

therapy or patients with HIV infection who are severely immunocompromised)

Varicella (VAR)

 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. Knoger A. Bahta L. Hunter P. ACIP General Best Practice Guidelines for immunization, www.cdc.pov/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.lda.gov/vaccines-biood-biologics/approved-products/vaccines-licensed-use-united-statesedemal icon.

containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid - containing vaccine - Moderate or severe acute lines with or without fever - For Tidap only: Progressive or unstable neurological disorder, uncontrolled selzure, or progressive-encephalopistry until a treatment regimen has been established and the condition has

Recent (≤11 months) receipt of antibody-containing blood

Receipt of specific antiviral drugs (acyclovir, famiciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these

Moderate or severe acute illness with or without fever

product (specific interval depends on product)

antiviral drugs for 14 days after vaccination)

Use of aspirin or aspirin-containing products

Thank You! Questions?

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

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



2022 Adult Immunization Schedule

LCDR Neil Murthy, US Public Health Service

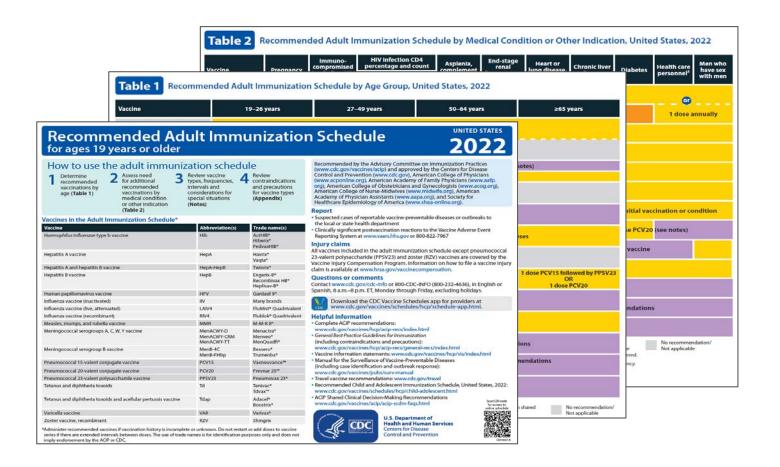
Changes to Tables

- Cover Page
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Changes to Vaccination Notes

- COVID-19
- Hepatitis B
- Human Papillomavirus
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- Measles, Mumps and Rubella
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- **Changes to Vaccination Notes**
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 - Pneumococcal
 - Varicella
 - Zoster

Notes

Recommended Adult Immunization Schedule, United States, 2022

Notes Recommended Adult Immunization Schedule, United States, 2022

Notes Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2022

For vaccine recommendations for persons 18 years of age or younger, see the Recommended Child/ Adolescent Immunization Schedule.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. Interim ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/aciprecs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/ vaccines/covid-19/clinical-considerations/covid-19vaccines-us.html.

Haemophilus influenzae type b vaccination

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib; if elective splenectomy, 1 dose, preferably at least 14 days before
- 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

 Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

· At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required)

Hepatitis B vaccination

Routine vaccination

- · Unvaccinated persons: complete a 2- or 3-, or 4-dose
- 2-dose series only applies when 2 doses of Heplisav-B* are used at least 4 weeks apart
- 3-dose series Engerix-B 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
- 4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of normal adult dose i.e. 2 mL instead of 1 mL)
- *Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

Routine vaccination

 HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:

- 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)
- Age 9-14 years at initial vaccination and received 1 dose or 2 doses less than 5 months apart: 1 additional
- Age 9-14 years at initial vaccination and received 2 doses at least 5 months apart: HPV vaccination series complete, no additional dose needed
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

 Some adults age 27-45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

Routine vaccination

- · Age 19 years or older: 1 dose any influenza vaccine appropriate for age and health status annually
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/rr/rr7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

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States, 2022

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 - Hepatitis B
 - Human Papillomavirus
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 - Pneumococcal
 - Varicella
 - Zoster
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recautions available at www.	risory Committee on Immunization Practices (ACIP) General Best Practic .cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html a	and ACIP's Recommendations for the Prevention and
Control of 2021-22 seasonal in Interim clinical consid-	nfluenza with Vaccines available at www.cdc.gov/mmwr/volumes/70/n erations for use of COVID-19 vaccines including contraind	r/rr7005a1.htm
	(covid-19/clinical-considerations/covid-19-vaccines-us.html	Procautions ²
Vaccine Hormophilus influenzae type b (Hb)	. Sovere allernic reaction (e.g. anarchylank) after a movings dose or to a vaccine component?	Moderate or severe acute liness with or without fever
Hepatitis A (HepA)	 For Hibaro, Acti-lib, and Pedvad-IB only: History of savers allergic reaction to dry natural latex Severe allergic reaction (e.g., anaphytate) after a previous dose or to a vaccine component¹ including mormych 	Moderate or severe acute liness with or without fever
Hepatitis B (HepB)	 Severe allergic reaction (e.g., anaphyticels) after a previous dose or to a vaccine component^o including year. For Hopitawa Only-Programcy 	Moderate or sovere acute liness with or without fover
Hepatitis A-Hepatitis B vaccine (HepA- HepB, (Twinste [®]))	 Severe allergic reaction (e.g., anaphytaxis) after a previous dose or to a vaccine component¹ including neomycin and yeast. 	- Moderate or severe acute liness with or without fever
Human papillomavirus (HPV)	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component ^a	- Moderate or severe acute liness with or without fever
Influenza, egg-based, inactivated injectable (IM4)	 Sees a largic reaction (see, anaphysical that provious does of any influence sections (se, any opposited (st. CML of M of my revision). Sees a allergic reaction (seg., anaphysiate) to any reaches component⁴ (sectuding agg) 	 Califair Sund gendrome (CRIS) which is weeks after a previous dose of type of influence section. Finance with opg allergy with graphores often than those seq. anaposedome, appreciarly obtates or residue of perception of another sampsooms, appreciarly obtates or residue of perception of another sampsooms, appreciarly obtates or residue appropriate administer in medical setting under supervision of residual residual with our recognition and manages awere allergic resolutions. May consult with our recognition and manages awere allergic resolutions. May consult
Influenza, cel culture-based Inachvated Injectable (IccIII/4), Flucelvar ^{et} Quadrivalent(Sovers allergic reaction (e.g., anaphytiate) to any colfe of any valency, or to any components of colfe⁴ 	- Guillain-Burnd syndrome (GISS) within 6 wooks after a provious doos of type of influence vaccine one along it cauchine (as, analysisse), after a brown with a fairburnd vaccine (as a size of the cauchine (as, analysisse), after a distribute of the cauchine (as a size of the cauchine) and a size of the cauchine (as a size of the cauchine)
Influenza, recombinant injectable ((RIMS), Rubliol ^e Quadmalent)	 - Savera allargic reaction (e.g., araphystati) to any RM of any realancy, or to any component of RVM 	 Cuttins-Barth sprotroms (ESS) within 6 wooks after a provious dose of type of this bary a version. Penors with a history of swere alleage reaction (e.g., analyticate), and provious dose of any ogs, board (FL, Ot of LAV of any valency it switch ENV, administer in modifical setting under supervision of health care provision who can recognize and financial solvino allergic reactions. May consult an allerget. Moderate or swere caste lines with or without fiver.
Influenza, Pro attenuated (J.AMA, Flumber Quadrivalent)	- Soons allergir seation (see, assighted) that protocol does of any inflamma vacative (st., any opposed file of the off any vacative (see any opposed file of the off any vacative component" planticing significant or later interfluence of the opposed file opposed fil	Cutation for any extreme (CEI) within 4 works after a provision date of provision for the provision of the collection of
Messies, mumps, rubelta (MMR)	 Sever a larger reaction ring, a rephylately after a previous does or to a section component? Severa immunodiation yiela, phreatiside and selet transmissed of chamedrasely, conspiratal immunodiations; biog-term firmunosepprosted transpired yield or selection who as several yield immunosepprosted. Family relately distanced immunocompetence, unless werified clinically or by subcoratory stating as immunocompeter. 	Recent (x11 months) receipt of artibody-containing blood product populir, interval depends on product people; interval depends on product yell-beloy of thrombocytoperia or thrombocytoperic purpura - Nacof for buberuain skin tecting or interferon-gamma release assay (60 testing) Moderate or severe acute litness with or without fever
Meningococcal ACWY (MenACWY) [MenACWY-D (Menactra*); MenACWY- TT (MenQuadf*)]	 Severe allergic reaction (e.g., anaphylaets) after a previous dose or to a vaccine component¹ For ManACWIV D and Man ACWIV-CRM only: severe allergic reaction to any diphthenia toxid-or CRM 107 - containing vaccine For ManACWIV-TT only: severe allergic reaction to a tetraus toxoid-containing vaccine 	- Moderate or severe acute liness with or without fever
Meningococcal B (MenB) MenB-AC (Bassero); MenB-FHbp (Trumenba)	- Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component ^o	Pregnancy For MenB-4C only: Latex sensitivity Moderate or severe acute lines; with or without fever
Pneumococcal conjugate (PCV15)	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-toxicid-containing vaccine on to its vaccine component ³	- Moderate or severe acute liness with or without fever
Pneumococcal conjugate (PCV20)	Sovere allergic reaction (e.g., anaphylads) after a previous dose or to a vaccine component ¹ Sovere allergic reaction (e.g., anaphylads) to any diphtheria-toxicid - containing vaccine or to its vaccine component ¹	- Moderate or severe acute liness with or without fever
Pneumococcal polysaccharide (PPSVZ3)	Severe allergic reaction (e.g., anaphylaxés) after a provious dose or to a vaccine component ^g	- Moderate or severe acute liness with or without fever
Tetanus, diphtheria, and acellular pertussis (flasp) Tetanus, diphtheria (Td)	 Seera allegic reaction (e.g., aucylinebas) after a profession does on this a section component for its propriet, instructionally vial, crisis, desirable and end consciousness, proteinaged solution, not attributable to another contribute cause, within 7 days of administration of profession does of DTP, DRP, or Topy 	 Gallain Burst griddrine (GIS) within 6 weeks after a previous does of tabusaus boxed. Crothings vaccine. Hebstry of Aftitus byte Representability reactions after a previous does deliver accretion that a last 10 years have sisped since the lost bits boxed. Containing vaccine. Moderate or seven accele films with or without fiver. Moderate or seven accele films with or without fiver. And the containing vaccine. Moderate or seven accele films with or without fiver. Moderate or seven accele films with or without fiver. Moderate or seven accele films with or without fiver. Moderate or seven accele films with or without films.
Varicella (VAR)	 Sever a large reaction (e.g., any)-place), tithe a previous does or to a section component is severe immunositionicy (e.g., harmaticing) and side timen, need of chromothesis, conquestal immunositionics (long-time immunosity personse) branches who are severely immunositionics harmaticine the area of the severely immunositionics - large threat of the severely immunosities - large threat of threat of the severely immunosities - large threat of the severely immunosities - large threat of threat of the severely immunosities - large threat of thr	- Riscard («11 months) receipt of artibody-containing blood product papers in third depends on product papers in third depends on product papers in the product papers in the product papers of the product papers are producted to produce a startified days for 14 days vaccination) - Lood of applies are carbaining products - Moderate or sown acide lines with or without theer - Moderate or sown and in Brows with or without theer - Moderate or sown and in Brows with or without they - Moderate or sown and in Brows with or with or without they - Moderate or sown and in Brows with or with or without they - Moderate or sown and in Brows with or w

Cover Page

Recommended Adult Immunization Schedule for ages 19 years or older

2022

How to use the adult immunization schedule

Determine recommended vaccinations by age (Table 1) Assess need for additional recommended vaccinations by medical condition or other indication (Table 2)

Review vaccine types, frequencies, intervals and considerations for special situations (Notes) Review contraindications and precautions for vaccine types (Appendix)

Vaccines in the Adult Immunization Schedule*

Vaccine	Abbreviation(s)	Trade name(s)
Haemophilus influenzae type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	НерА	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	НерА-НерВ	Twinrix*
Hepatitis B vaccine	НерВ	Engerix-B° Recombivax HB° Heplisav-B°
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM MenACWY-TT	Menactra® Menveo® MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero® Trumenba®
Pneumococcal 15-valent conjugate vaccine	PCV15	Vaxneuvance™
Pneumococcal 20-valent conjugate vaccine	PCV20	Prevnar 20™
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Varicella vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix

^{*}Administer recommended vaccines if vaccination history is incomplete or unknown. Do not restart or add doses to vaccine series if there are extended intervals between doses. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American College of Physicians (www.acponline.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), American Academy of Physician Assistants (www.aapa.org), and Society for Healthcare Epidemiology of America (www.shea-online.org).

Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to the local or state health department
- Clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or 800-822-7967

Injury claims

All vaccines included in the adult immunization schedule except pneumococcal 23-valent polysaccharide (PPSV23) and zoster (RZV) vaccines are covered by the Vaccine Injury Compensation Program. Information on how to file a vaccine Injury claim is available at www.hrsa.gov/vaccinecompensation.

Questions or comments

Contact 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.

Helpful information

- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: 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
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2022: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip-scdm-fags.html



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Haemophilus influenzae type b vaccine	Ніб	ActHIB* Hiberix* PedvaxHIB*
Hepatitis A vaccine	НерА	Havrix" Vaqta"
Hepatitis A and hepatitis B vaccine	НерА-НерВ	Twinrix*
Hepatitis B vaccine	НерВ	Engerix-B* Recombivax HB* Heplisav-B*
Human papillomavirus vaccine	HPV	Gardasil 9*
Influenza vaccine (mactivated)	IIV	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok* Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II*
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM MenACWY-TT	Menactra* Menveo* MenQuadfi*
Meningococcal serogroup B vaccine	Men8-4C Men8-FHbp	Bexsero* Trumeriba*
Pneumococcal 15-valent conjugate vaccine	PCV15	Vaxneuvance**
Pneumococcal 20-valent conjugate vaccine	PCV20	Prevnar 20**
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Tetanus and diphtheria toxoids	Td	Tenivac" Tdvax"
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel* Boostrix*
Varicella vaccine	VAR	Varivax*
Zoster vaccine; recombinant	RZV	Shinanx

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- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Manual for the Surveillance of Vaccine-Preventable Disease (including case identification and outbreak response): www.cdc.gov/vaccines/pubs/surv-manual
- Travel vaccine recommendations: www.cdc.gov/trave
- Recommended Child and Adolescent Immunization Schedule, United States, 2022: www.cdc.gov/vaccines/schedules/hcp/child-adolescent html
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Vaccines in the Adult Immunization Schedule*

Influenza vaccine (recombinant) Measles, mumps, and rubella vaccine Meningococcal serogroups A, C, W, Y vaccine Meningococcal serogroups A, C, W, Y vaccine Meningococcal serogroup B vaccine Meningococcal serogroup B vaccine MenB-4C MenB-4C MenB-FHbp Trumenba* Prieumococcal 15-valent conjugate vaccine PCV15 Vaxneuvance** Pneumococcal 20-valent conjugate vaccine PCV20 Prevmar 20** Pneumococcal 23-valent polysaccharide vaccine PSV23 Pneumovax 23* Tetanus and diphtheria toxolds Td Tenivac* Tdvax** Tetanus and diphtheria toxolds and acellular pertussis vaccine Tdap Adacel* Boostrix*			Trade name(s)
Hepatitis A and hepatitis B vaccine Hepatitis	Haemophilus influenzae type b vaccine	Ніб	Hiberix*
Hepatitis B vaccine epatitis Allow Hepatitis Hepatitis Hepatitis Allow Hepatitis He	Hepatitis A vaccine	НерА	
Human papillomavirus vaccine HPV Gardasil 9* Influenza vaccine (mactivated) IIIV Many brands Influenza vaccine (live, attenuated) Influenza vaccine (live, attenuated) Influenza vaccine (recombinant) RIV4 FluMist* Quadrivalent Influenza vaccine (recombinant) RIV4 Flublok* Quadrivalent Measles, mumps, and rubella vaccine Menacty-Cam Menacty-Cam Menactra* Menactra* Menacty-Cam Menactra* Menac	Hepatitis A and hepatitis B vaccine	НерА-НерВ	Twimrix*
Influenza vaccine (inactivated) Influenza vaccine (ilve, attenuated) Influenza vaccine (recombinant) Measles, mumps, and rubella vaccine Meningococcal serogroups A, C, W, Y vaccine Meningococcal serogroups B vaccine Meningococcal serogroup B vaccine Meningococcal serogroup B vaccine Meningococcal serogroup B vaccine MenB-4C MenB-4C MenB-FHbp Trumeriba Prieumococcal 15-valent conjugate vaccine PCV15 Vaxrieuvance ^{ms} Prieumococcal 29-valent conjugate vaccine PCV20 Prevnar 20 ^{ms} Prieumococcal 23-valent polysaccharide vaccine PCV20 Prieumococcal 23-valent polysaccharide vaccine PCV20 Prieumococcal 23-valent polysaccharide vaccine Tda Tenivaca Tda Adacela Boostrixa Varicella vaccine VAR Varivaxa	Hepatitis B vaccine	НерВ	Recombivax HB*
Influenza vaccine (live, attenuated) Influenza vaccine (recombinant) Measles; mumps, and rubella vaccine Meningococcal serogroups A, C, W, Y vaccine Meningococcal serogroups B vaccine Meningococcal serogroup B vaccine Meningococcal 15-valent conjugate vaccine PCV15 Vaxneuvance ^{®x} Prieumococcal 25-valent conjugate vaccine PCV20 Prevmar 20 ^{®x} Preumococcal 23-valent polysaccharide vaccine PCV20 Prevmar 20 ^{®x} Preumococcal 23-valent polysaccharide vaccine PFSV23 Pneumovax 23 ^{®x} Tetanus and diphtheria toxoids Td Tenivac ^{®x} Tetanus and diphtheria toxoids and acellular pertussis vaccine Tdap Adacel ^{®x} Boostrix ^{®x} Varicella vaccine	Human papillomavirus vaccine	HPV	Gardasil 9*
Influenza vaccine (recombinant) Measles, mumps, and rubella vaccine Menactra Meningococcal serogroups A, C, W, Y vaccine Menactwy-D Menactra MenACWY-CRM Menveo MenACWY-TT MenOuadfi MenP-FHbp Trumenba Preumococcal 15-valent conjugate vaccine PCV15 Preumococcal 20-valent conjugate vaccine PCV20 Prevnar 20** Preumococcal 23-valent polysaccharide vaccine PSV23 Preumococcal 23-valent polysaccharide vaccine PSV23 Preumocaccal 23-valent polysaccharide vaccine PSV23 Tetanus and diphtheria toxolds Td Tenivac* Tdvax** Tetanus and diphtheria toxolds and acellular pertussis vaccine VAR Varioella vaccine VAR Varioex**	Influenza vaccine (inactivated)	IIV	Many brands
Measles, mumps, and rubella vaccine Meningococcal serogroups A, C, W, Y vaccine MenACWY-D MenACWY-GRM MenVeo® MenACWY-TT MenQuadfi® MenB-4C MenB-Hbp MenCwy-T MenDuadfi® MenCwy-T MenDuadfi® MenACWY-D MenDuadfi® MenACWY-T MenDuadfi® MenACWY-D MenDuadfi® MenDuad	Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Meningococcal serogroups A, C, W, Y vaccine MenACWY-D MenACWY-TT MenQuadfin Meningococcal serogroup B vaccine MenB-FH bp MenB-WenB-FH bp MenB-WenB-WenB-WenB-WenB-WenB-WenB-WenB-W	Influenza vaccine (recombinant)	RIV4	Flublok* Quadrivalent
MenACWY-CRM MenVeo* MenACWY-TT MenQuadfi* MenIngococcal serogroup B vaccine MenB-4C Bexsero* MenB-FHbp Trumeriba* Prieumococcal 15-valent conjugate vaccine PCV15 Vaxneuvance** Prieumococcal 20-valent conjugate vaccine PCV20 Prevnar 20** Prieumococcal 23-valent polysaccharide vaccine PPSV23 Prieumovax 23** Tetanus and diphtheria toxoids Td Tenivac* Tdvax** Tetanus and diphtheria toxoids and acellular pertussis vaccine Tdap Adacel* Boostrix* Varicella vaccine VAR Varivax**	Measles, mumps, and rubella vaccine	MMR	M-M-R II*
MenB-FHbp Trumenba* Prieumococcal 15-valent conjugate vaccine PCV15 Vaxneuvance** Prieumococcal 20-valent conjugate vaccine PCV20 Prevnar 20** Prieumococcal 23-valent polysaccharide vaccine PPSV23 Prieumovax 23** Tetanus and diphtheria toxolds Td Tenivac* Tdvax** Tetanus and diphtheria toxolds and acellular pertussis vaccine Tdap Adacel* Boostrix* Varicella vaccine VAR Varivax**	Meningococcal serogroups A, C. W, Y vaccine	MenACWY-CRM	Menveo*
Prieumococcal 20-valent conjugate vaccine PCV20 Prevnar 20** Pneumococcal 23-valent polysaccharide vaccine PPSV23 Pneumovax 23** Tetanus and diphtheria toxolds Td Tenivac** Tdvax*** Tetanus and diphtheria toxolds and acellular pertussis vaccine Tdap Adacel* Boostrix* Varicella vaccine VAR Varivax**	Meningococcal serogroup B vaccine		
Pneumococcal 23-valent polysacchande vaccine PPSVZ3 Pneumovax 23* Tetanus and diphtheria toxoids Td Tenivac* Tdvax** Tetanus and diphtheria toxoids and acellular pertussis vaccine Tdap Adacel* Roostrix* Varicella vaccine VAR Varivax*	Pneumococcal 15-valent conjugate vaccine	PCV15	Vaxneuvance**
Tetanus and diphtheria toxoids Td Tenivac* Tdvax*** Tetanus and diphtheria toxoids and acellular pertussis vaccine Tdap Adacel* Boostrix* Varicella vaccine VAR Varivax**	Pneumococcal 20-valent conjugate vaccine	PCV20	Prevnar 20**
Tdvax** Tetanus and diphtheria toxoids and acellular pertussis vaccine Varicella vaccine Tdap Adacel* Boostrix* Varivax*	Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Varicella vaccine VAR Varivax*	Tetanus and diphtheria toxolds	Td	
	Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	
Zoster vaccine, recombinant RZV Shingrix	Varicella vaccine	VAR	Varivax*
	Zoster vaccine, recombinant	RZV	Shingrix

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Human papillomavirus vaccine	HPV	Gardasil 9*
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Pneumococcal 15-valent conjugate vaccine	PCV15	Vaxneuvance ^m
Pneumococcal 20-valent conjugate vaccine	PCV20	Prevnar 20**
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Tetanus and diphtheria toxolds	Td	Tenivac" Tdvax ^{re}
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel* Boostrix*
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Influenza vaccine (inactivated)	IIV	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
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Table 1. Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2022

Always make recommendations by determining needed vaccines based on age (Table 1), assessing for medical conditions and other indications (Table 2), and reviewing special situations (Notes).



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COVID-19 Vaccination

ACIP recommends use of COVID-19 vaccines for everyone ages 12 and older within the scope of the Emergency Use Authorization for the particular vaccine. COVID-19 vaccine and other vaccines may be administered on the same day. See the COVID-19 Vaccine Product Information page for additional information about COVID-19 vaccines authorized for use in the United States.

Table 1. By age

Table 2. By indications

Schedule Changes & Guidance

Resources for health care providers

- <u>8.5"x11" print color</u> [6 pages]
- Compliant version of this schedule

- Vaccines in the Adult Immunization Schedule
- Learn how to display current schedules from your website.
- · Hard copies of the schedule are available for free using the CDC-info on Demand order form.

Download Schedules App



Table One

The Recommended Adult Immunization Schedule

Recommended Adult Immunization Schedule by Age Group, United States, 2022

Vaccine	19–26 years	27-49 years		50–64 years		≥65 years		
Influenza inactivated (IIV) or Influenza recombinant (RIV4)		1 dose an	nually					
Influenza live, attenuated (LAIV4)		1 dose an	nually					
Tetanus, diphtheria, pertussis	1 dose	Tdap each pregnancy; 1 d		-		notes)		
(Tdap or Td)		1 dose Tdap, then	d or Tda	p booster every 10 years	5			
Measles, mumps, rubella (MMR)				ng on indication 7 or later)				
Varicella (VAR)	2 doses (if born in 1980			2 doses				
Z oster recombinant (RZV)	2 doses for immunocompromising conditions (see notes				2 do	oses		
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition 27 through 45 years							
Pneumococcal (PCV15, PCV20, PPSV23)		1 dose PCV15 follo OR 1 dose PCV20				1 dose PCV15 followed by PPSV23 OR 1 dose PCV20		
Hepatitis A (HepA)		2 or 3 dos	es deper	nding on vaccine				
Hepatitis B (HepB)		2, 3, or 4 doses de	pending	on vaccine or condition				
Meningococcal A, C, W, Y (MenACWY)	1 or 2	1 or 2 doses depending on indication, see notes for booster recommendations						
Meningococcal B (MenB)	2 or 3 dose 19 through 23 years	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations 19 through 23 years						
Haemophilus influenzae type b (Hib)		1 or 3 dose	depend	ling on indication				
Recommended vaccination for adults who meet age requirement, Recommended vaccination for adults with an Recommended vaccination based on shared No recommendation								

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection Recommended vaccination for adults with a additional risk factor or another indication Recommended vaccination based on shared clinical decision-making

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2022

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Measles, mumps, rubella MMR)		1 or 2 doses dependin (if born in 1957								
/aricella VAR)	2 doses (if born in 1980 or	later)	2 doses							
Coster recombinant RZV)	2 doses for immunocompromis	2 doses for immunocompromising conditions (see notes)								
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years								
Pneumococcal PCV15, PCV20, PPSV23)		1 dose PCV15 followed by P OR 1 dose PCV20 (see note		1 dose PCV15 followed by PPSV2: OR 1 dose PCV20						
Hepatitis A HepA)		2 or 3 doses depend	ding on vaccine							
Hepatitis B HepB)		2, 3, or 4 doses depending of	on vaccine or condition							
Meningococcal A, C, W, Y MenACWY)	1 or 2 c	doses depending on Indication, see	notes for booster recommenda	tions						
	2 or 3 doses	depending on vaccine and indicati	ion, see nates for booster recam	mendations						
Meningococcal B MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations 9 through 23 years								

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

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

Recommended vaccination based on shared clinical decision-making

Recommended Adult Immunization Schedule by Age Group, United States, 2022



Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection Recommended vaccination for adults with an additional risk factor or another indication Recommended vaccination based on shared clinical decision-making

Recommended Adult Immunization Schedule by Age Group, United States, 2022

Vaccine	19-26 years	27–49 years	50-64 years	≥65 years				
Influenza inactivated (IIV) or Influenza recombinant (RIV4)		1 dose annually						
Influenza live, attenuated (LAIV4)		1 dose annually						
Tetanus, diphtheria, pertussis (Tdap.orTd)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)							
Toap or to		1 dose Tdap, then Td or Tdap	booster every 10 years					
Measles, mumps, rubella (MMR)		1 or 2 doses dependin (if born in 1957						
Varicella (VAR)	2 doses (if born in 1980 o	or later)	2 doses					
Zoster recombinant RZV)	2 doses for immunocompromi	2 d	2 doses					
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years						
Pneumococcal (PCV15, PCV20, PPSV23)		1 dose PCV15 followed by P OR 1 dose PCV20 (see note		1 dose PCV15 followed by PPSV2 OR 1 dose PCV20				
Hepatitis A (HepA)		2 or 3 doses depen	ding 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	e notes for booster recommenda	tions				
Meningococcal B	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations							
(MenB)	19 through 23 years							
Haemophilus influenzae type b (Hib)		1 or 3 doses depend	ing on indication					
	s who meet age requirement,	commended vaccination for adults with an	Recommended vaccination based o	n shared No recommendatio				

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

Recommended vaccination for adults with a additional risk factor or another indication Recommended vaccination based on share clinical decision-making

Recommended Adult Immunization Schedule by Age Group, United States, 2022

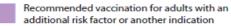
Vaccine	19-26 years	27–49 years	50–64 years	≥65 years			
Influenza inactivated (IIV) or Influenza recombinant (RIV4)		1 dose annually					
influenza live, attenuated LA(V4)		1 dose annually					
Tetanus, diphtheria, pertussis Tdap or Td)	1 doseTd	ap each pregnancy; 1 dose Td/To	lap for wound management (see i	notes)			
Measles, mumps, rubella MMR)		1 or 2 doses dependi (if born in 195	ng on indication				
Varicella VAR)	2 doses (if born in 1980 or l	ater)	2 doses				
Zoster recombinant RZV)	2 doses for immunocompromising	2 doses for immunocompromising conditions (see notes)					
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years					
Pneumococcal PCV15, PCV20, PPSV23)		1 dose PCV15 followed by I OR 1 dose PCV20 (see not		1 dose PCV15 followed by PPSV2 OR 1 dose PCV20			
Hepatitis A HepA)		2 or 3 doses deper	iding on vaccine				
Hepatitis B HepB)		2, 3, or 4 doses depending	on vaccine or condition				
Meningococcal A, C, W, Y MenACWY)	1 or 2 do	ses depending on Indication, se	e notes for booster recommendat	lions			
Meningococcal B (MenB)	2 or 3 doses d 19 through 23 years	epending on vaccine and indica	tion, see notes for booster recom	mendations			
Haemophilus influenzae type b Hib)		1 or 3 doses depend	ling on indication				
			Recommended vaccination based o	n shared No recommendation			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection Recommended vaccination for adults with a additional risk factor or another indication Recommended vaccination based on share clinical decision-making

Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2022

Vaccine	19–26 years	27–49 years	50-64 years	≥65 years		
Influenza inactivated (IIV) or Influenza recombinant (RIV4)		1 dose annually				
Influenza live, attenuated (LA(V4)		1 dose annually				
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose	Tdap each pregnancy; 1 dose Td/Td		notes)		
Measles, mumps, rubella (MMR)		1 or 2 doses depending	ng on Indication			
Varicella (VAR)	2 doses (if born in 1980	or later)	2 doses			
Zoster recombinant (RZV)	2 doses for immunocomprom	lising 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, PPSV23)		1 dose PCV15 followed by F OR 1 dose PCV20 (see note		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20		
Hepatitis A (HepA)		2 or 3 doses depen	iding 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, se	e notes for booster recommenda	tions		
Meningococcal B (MenB)	2 or 3 dose 19 through 23 years	es depending on vaccine and indica	tion, see notes for booster recom	mendations		
Haemophilus influenzae type b (Hib)		1 or 3 doses depend	ling on indication			
Recommended vaccination for adult		ecommended vaccination for adults with an	Recommended vaccination based of	on shared No recommendation/		

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



Recommended vaccination based on shared clinical decision-making

Recommended Adult Immunization Schedule by Age Group, United States, 2022

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years					
Influenza inactivated (IIV) or Influenza recombinant (RIV4)		1 dose annually							
Influenza live, attenuated (LA(V4)		1 dose annually							
Tetanus, diphtheria, pertussis	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)								
(Tdap or Td)		1 dose Tdap, then Td or Tdap	booster every 10 years						
Measles, mumps, rubella (MMR)		1 or 2 doses dependin (if born in 1957							
Varicella (VAR)	2 doses (if born in 1980		2 doses						
Zoster recombinant (RZV)	2 doses for immunocompron	doses							
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years							
Pneumococcal (PCV15, PCV20, PPSV23)		1 dose PCV15 followed by P OR 1 dose PCV20 (see note		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20					
Hepatitis A (HepA)		2 or 3 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	2 doses depending on indication, sec	e notes for booster recommenda	tions					
Meningococcal B (MenB)	2 or 3 dose 19 through 23 years	es depending on vaccine and indicat	ion, see notes for booster recom	mendations					
Haemophilus influenzae type b (Hib)		1 or 3 doses depend	ing on indication						
Recommended vaccination for adult lack documentation of vaccination, o		ecommended vaccination for adults with an dditional risk factor or another indication	Recommended vaccination based of clinical decision-making	on shared No recommendation/ Not applicable					

The Medical Indications Table

Vaccine	Pregnancy	Immuno- compromised (excluding HIV infection)	percentage <15% or	ction CD4 e and count ≥15% and ≥200 mm³	Asplenia, complement deficiencies	End-stage renal disease; or on hemodialysis	Heart or lung disease, alcoholism¹	Chronic liver disease	Diabetes	Health care personnel ²	Men who have sex with men
IIV or RIV4		1 dose annually							o o		
LAIV4		Not Recommended				Precaution				1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy				1 dose Tdap, t	hen Td or Tdap	booster every	10 years			
MMR	Not Recommended*	Not Recom	mended			1 or 2	doses depend	ling on indicati	on		
VAR	Not Recommended*	Not Recom	mended					2 doses			
RZV		2 doses	2 doses at age ≥ 19 years 2 doses at age ≥ 50 years								
нру	Not Recommended*	3 doses th	3 doses through age 26 years 2 or 3 doses through age 26 years depending on age at initial vaccination or condition						ndition		
Pneumococcal (PCV15, PCV20, PPSV23)						1 dose PC\	V15 followed b	y PPSV23 OR 1	dose PCV20	(see notes)	
НерА							2 or 3 de	ses depending	g on vaccine		
НерВ	3 doses (see notes)				2, 3, or 4 dos	ses depending	on vaccine o	condition			
MenACWY		1 or 2 doses	depending	on indication	, see notes for	booster recom	mendations				
MenB	Precaution		2 or 3 o	doses depend	ling on vaccin	e and indication	n, see notes fo	r booster recor	nmendations	5	
Hib		3 doses HSCT ³ recipients only			1 dose						
Recommended va for adults who me age requirement, I documentation of vaccination, or lack evidence of past in	et ack k	Recommended vacci for adults with an ado risk factor or another indication	litional	Recommended v. based on shared of decision-making		Precaution—vacc might be indicate benefit of protect outweighs risk of reaction	ed if tion	Contraindicated o recommended—v should not be adn *Vaccinate after pr	accine ninistered.	No recommen Not applicable	

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy			End-stage renal disease; or on hemodialysis	ase, Chronic liver Diabete	Health care personnel ² Men who have sex with men	
IIV or RIV4				dose annually			
LAIV4				Pr	1 dose annually		
Tdap or Td	1 dose Tdap each pregnancy	Trince Irian than Iri or Irian bonstar bypry 10 years					
MMR				1 or 2 doses dep	ending on Indication		
VAR					2 doses		
RZV		2 doses at age ≥ 19 years 2 doses at age ≥ 50 years					
HPV		3 doses through age 26 years 2 or 3 doses through age 26 years depending on age				at initial vaccination or condition	
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 follow	ed by PPSV23 OR 1 dose PCV	/20 (see notes)	
НерА				2 or	3 doses depending on vacci	ne	
НерВ	3 doses (see notes)		2, 3, or 4 do	ses depending on vaccin	e or condition		
MenACWY		1 or 2 doses depending or	n indication, see notes fo	booster recommendation	ns		
MenB	Precaution	Precaution 2 or 3 doses depending on vaccine and indication, see notes for booster recommendations					
Hib		3 doses HSCTI recipients only	1 dose				
Recommended va for adults who me age requirement, documentation of vaconation, or lac evidence of past in		for adults with an additional be		Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated or not recommended—vaccine should not be administered. *Vaccinate after pregnancy.	No recommendation/ Not applicable	

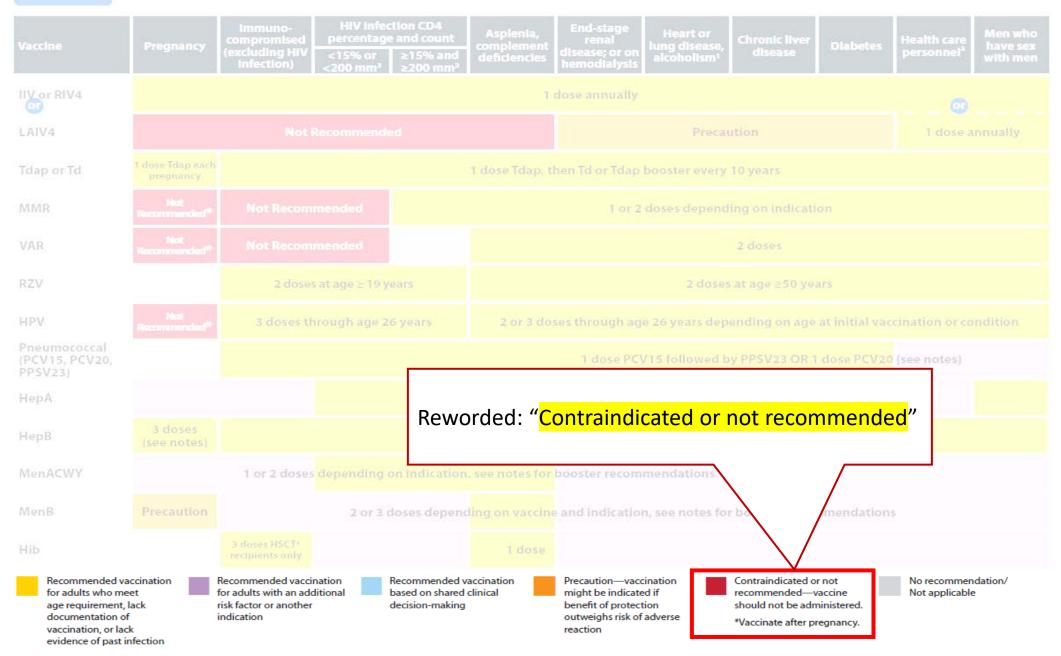
^{1.} Precausion for EAIV4 dises not apply to alcoholism. 2. See notes for influenza, hepasitis B, measles, mumps, and rubella, and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy	Immuno- compromised (excluding HIV infection) HIV infect percentage <15% or <200 mm³	and count Asplenia compleme ≥15% and deficienci	nt lung dise	ease, Chronic liver	Diabetes	Health care personnel ² Men who have sex with men	
IIV or RIV4				1 dose annually				
LAIV4				Р	recaution		1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy		1 dose Tda	1 dose Tdap, then Td or Tdap booster every 10 years				
MMR			Not Recommended 1 or 2 doses depending on Indication					
VAR				2 doses				
RZV		2 doses at age ≥ 19 ye	2 doses at age ≥ 19 years 2 doses at age ≥ 50 years					
HPV		3 doses through age 26	years 2 or 3	2 or 3 doses through age 26 years depending on age at initial vaccination or condition				
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 follow	ved by PPSV23 OR 1	dose PCV20	(see notes)	
НерА				201	r 3 doses depending	on vaccine		
НерВ	3 doses (see notes)		2, 3, or 4	doses depending on vaccin	ne or condition			
MenACWY		1 or 2 doses depending o	n indication, see notes	or booster recommendation	ns			
MenB	Precaution	Precaution 2 or 3 doses depending on vaccine and indication, see notes for booster recommendations						
Hib		3 doses HSCTI recipients only	1 do					
Recommended va for adults who me age requirement, documentation of vaconation, or lac evidence of past in		for adults with an additional b		Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated or recommended—w should not be adm "Vaccinate after pr	accine urustered	No recommendation/ Not applicable	

^{1.} Precausion for EAIV4 dises not apply to alcoholism. 2. See notes for influenza, hepasitis B, measles, mumps, and rubella, and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy	compromised percentag (excluding HIV <15% or	ection CD4 ge and count ≥15% and ≥200 mm ³	Asplenia, complement deficiencies	End-stage renal disease; or on hemodialysis	Heart or lung disease, alcoholism ¹	Chronic liver disease	Diabetes	Health care personnel ³	Men who have sex with men
IIV or RIV4				1	dose annually					
LAIV4				Precaution				1 dose annually		
Tdap or Td	1 dose Tdap each pregnancy		1 dose Tdap, then Td or Tdap booster every 10 years							
MMR					1 or 2	doses depend	ling on Indicati	ion		
VAR							2 doses			
RZV		2 doses at age ≥ 19	2 doses at age ≥ 19 years 2 doses at age ≥ 50 years							
HPV		3 doses through age	26 years	2 or 3 do	ses through ag	e 26 years dep	ending on age	at initial yac	cination or co	ndition
Pneumococcal (PCV15, PCV20, PPSV23)					1 dose PC\	V15 followed b	y PPSV23 OR 1	I dose PCV20	(see notes)	
НерА						2 or 3 de	oses depending	g on vaccine		
НерВ	3 doses (see notes)			2, 3, or 4 dos	es depending	on vaccine or	condition			
VlenACWY		1 or 2 doses depending	on indication	, see notes for	booster recom	mendations				
MenB	Precaution	2 or 3	doses depend	ding on vaccin	e and indication	n, see notes fo	r booster recor	nmendation	5	
Hib		3 doses HSCTI recipients only		1 dose						
Recommended v. for adults who me age requirement, documentation of vaccination, or late evidence of past	eet , lack of ck	Recommended vaccination for adults with an additional risk factor or another indication	Recommended v based on shared decision-making	clinical	Precaution—vacc might be indicate benefit of protect outweighs risk of reaction	ed if tion	Contraindicated o recommended—v should not be adn *Vaccinate after p	vaccine ministered.	No recommer Not applicable	

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.



^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy	Immuno- compromised (excluding HIV Infection) HIV infection C percentage and c <15% or ≥15% <200 mm³ ≥200	count Asplenia, complement deficiencies	End-stage renal disease; or on hemodialysis	e, Chronic liver Diabete	es Health care personnel ² Men who have sex with men		
IIV or RIV4			i	dose annually				
LAIV4				Pre	1 dose annually			
Tdap or Td	1 dose Idap each pregnancy		1 dose Tdap, t	hen Td or Tdap booster eve	ry 10 years			
MMR				1 or 2 doses depe	nding on Indication			
VAR					2 doses			
RZV		2 doses at age ≥ 19 years	ses at age ≥50 years					
HPV	Plant Recognitions dead ⁹	3 doses through age 26 year	s 2 or 3 do	2 or 3 doses through age 26 years depending on age at initial vaccination or condition				
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 follower	d by PPSV23 OR 1 dose PC	V20 (see notes)		
НерА				2 or 3	doses depending on vacci	ne		
НерВ	3 doses (see notes)		2, 3, or 4 do:	ses depending on vaccine	or condition			
MenACWY		1 or 2 doses depending on ind	ication, see notes for	booster recommendations				
MenB	Precaution	2 or 3 doses	depending on vaccin	e and indication, see notes	for booster recommendat	ions		
Hib		3 doses HSCTI recipients only	1 dose					
Recommended va for adults who me age requirement, documentation o vaccination, or law evidence of past i	eet lack f k	for adults with an additional based o	nended vaccination n shared clinical n-making	Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated or not recommended—vaccine should not be administered. *Vaccinate after pregnancy.	No recommendation/ Not applicable		

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy	Immuno- compromised (excluding HIV infection CD4 percentage and count <15% or <15% or <200 mm³ ≥200 mm	deficiencies	End-stage Heart of lung disease; or on hemodialysis	ase, Chronic liver	Diabetes	Health care have sex with men		
IIV or RIV4			1	dose annually					
LAIV4				P		1 dose annually			
Tdap or Td	1 dose Tdap each pregnancy		1 dose Tdap, t	hen Td or Tdap booster e	very 10 years				
MMR				1 or 2 doses dej	pending on Indicati	on			
VAR	Picit Recoversorsion [®]	Not Recommended			2 doses				
RZV		2 doses at age ≥ 19 years	1	2 doses at age ≥50 years					
HPV	Paral Recognitions dead ^o	3 doses through age 26 years	2 or 3 do	2 or 3 doses through age 26 years depending on age at initial vaccination or condition					
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 follow	red by PPSV23 OR 1	dose PCV20	(see notes)		
НерА				2 01	3 doses depending	j on vaccine			
НерВ	3 doses (see notes)		2, 3, or 4 do:	ses depending on vaccin	re or condition				
MenACWY		1 or 2 doses depending on indication	on, see notes for	booster recommendatio	ns				
MenB	Precaution	2 or 3 doses depe	nding on vaccin	e and indication, see not	es for booster recor	nmendation	5		
Hib		3 closes HSCT) - recipients only	1 dose						
Recommended va for adults who me age requirement, documentation of vaccination, or lac evidence of past i	eet lack f k	Recommended vaccination for adults with an additional risk factor or another indication	ed clinical	Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated o recommended—v should not be adn *Vaccinate after pr	vaccine ninistered.	No recommendation/ Not applicable		

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy	Immuno- compromised (excluding HIV infection)	Asplenia, complement deficiencies	End-stage Heart or lung disease; or on hemodialysis		Health care personnel ² Men who have sex with men	
IIV or RIV4			i	dose annually			
LAIV4				Precaution			
Tdap or Td	1 dose Tdap eac pregnancy		1 dose Tdap, t	hen Td or Tdap booster eve	ry 10 years		
MMR				1 or 2 doses deper	nding on Indication		
VAR					2 doses		
RZV		2 doses at age ≥ 19 years 2 doses at age ≥ 50 years					
HPV		3 doses through age 26 years 2 or 3 doses through age 26 years depending on age at initial vaccinal					
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 followed	l by PPSV23 OR 1 dose PCV2	(see notes)	
НерА				2 or 3	doses depending on vaccin	e	
НерВ	3 doses (see notes)		2, 3, or 4 dos	es depending on vaccine	or condition		
MenACWY		1 or 2 doses depending on i	ndication, see notes for	booster recommendations			
MenB	Precaution	2 or 3 dos	es depending on vaccin	e and indication, see notes	for booster recommendatio	ns	
Hib		3 doses HSCTI recipients only	1 dose				
Recommended of for adults who mage requirement documentation vaccination, or la evidence of past	neet t, lack of ack	for adults with an additional base	ommended vaccination ed on shared clinical sion-making	Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated or not recommended—vaccine should not be administered. *Vaccinate after pregnancy.	No recommendation/ Not applicable	

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy	Immuno- compromised percentage (excluding HIV Infection) <15% or <200 mm³	ction CD4 e and count ≥15% and ≥200 mm³	ent lung disea	se, Chronic liver	Diabetes Health care personnel ² Men who have sex with men		
IIV or RIV4				1 dose annually				
LAIV4				Pr	ecaution	1 dose annually		
Tdap or Td	1 dose Tdap each pregnancy		1 dose Td	ap, then Td or Tdap booster ev	ery 10 years			
MMR				1 or 2 doses dep	ending on Indication			
VAR			Not Recommended 2 doses					
RZV		2 doses at age ≥ 19 years 2 doses at age ≥ 50 years						
HPV	Not Recommended	3 doses through age 20	6 years 2 or 1	2 or 3 doses through age 26 years depending on age at initial vaccination or condition				
Durannasasas		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)						
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 follow	ed by PPSV23 OR 1 do	ose PCV20 (see notes)		
(PCV15, PCV20,					ed by PPSV23 OR 1 do			
(PCV15, PCV20, PPSV23)	3 doses (see notes)		2, 3, or 4		3 doses depending o			
(PCV15, PCV20, PPSV23)		1 or 2 doses depending o		2 or	3 doses depending o			
(PCV15, PCV20, PPSV23) HepA HepB			on indication, see notes	2 or doses depending on vaccin	3 doses depending on e or condition	n vaccine		
(PCV15, PCV20, PPSV23) HepA HepB MenACWY	(see notes)		on indication, see notes	2 or doses depending on vaccin for booster recommendation coine and indication, see note	3 doses depending on e or condition	n vaccine		

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy	Immuno- compromised (excluding HIV infection) HIV infection C percentage and c <15% or <200 mm³ ≥20	count Asplenia, complement	End-stage renal disease; or on hemodialysis		Health care personnel ² Men who have sex with men		
IIV or RIV4			1	dose annually				
LAIV4				Pre	1 dose annually			
Tdap or Td	1 dose Tdap each pregnancy		1 dose Tdap, t	then Td or Tdap booster eve	ry 10 years			
MMR				1 or 2 doses depe	nding on Indication			
VAR					2 doses			
RZV		2 doses at age ≥ 19 years 2 doses at age ≥ 50 years						
HPV		3 doses through age 26 year	rs 2 or 3 do	2 or 3 doses through age 26 years depending on age at initial vaccination or condition				
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 followe	d by PPSV23 OR 1 dose PCV	20 (see notes)		
НерА				2 or 3	doses depending on vaccin	e		
НерВ	3 doses (see notes)		2, 3, or 4 do	ses depending on vaccine	or condition			
MenACWY		1 or 2 doses depending on ind	lication, see notes for	booster recommendations				
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations				ns		
Hib		3 doses HSCT* recipients only	1 dose					
Recommended va for adults who me age requirement, documentation o vaccination, or lad evidence of past i	eet lack f :k	for adults with an additional based of	mended vaccination on shared clinical n-making	Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated or not recommended—vaccine should not be administered. *Vaccinate after pregnancy.	No recommendation/ Not applicable		

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Vaccine	Pregnancy		CD4 Asplenia, complement 5% and deficiencies	End-stage Heart or renal lung disea disease; or on hemodialysis	se, Chronic liver D	Health care have sex with men		
IIV or RIV4			i	dose annually				
LAIV4				Precaution				
Tdap or Td	1 dose Tdap each pregnancy		1 dose Tdap, t	hen Td or Tdap booster ev	ery 10 years			
MMR				1 or 2 doses depe	ending on Indication			
VAR		Not Recommended 2 doses						
RZV		2 doses at age ≥ 19 years 2 doses at age ≥ 50 years						
HPV		3 doses through age 26 yea	ars 2 or 3 do	2 or 3 doses through age 26 years depending on age at initial vaccination or condition				
Pneumococcal (PCV15, PCV20, PPSV23)				1 dose PCV15 followe	d by PPSV23 OR 1 dos	se PCV20 (see notes)		
НерА				2 or 3	doses depending on	vaccine		
НерВ	3 doses (see notes)		2, 3, or 4 dos	ses depending on vaccine	or condition			
MenACWY		1 or 2 doses depending on in	dication, see notes for	booster recommendation	s			
MenB	Precaution	2 or 3 dose	s depending on vaccin	e and indication, see notes	for booster recomme	endations		
Hib		3 doses HSCT recipients only.	1 dose					
for adults who meet age requirement, lack		for adults with an additional based	nmended vaccination on shared clinical on-making	Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction	Contraindicated or not recommended—vaccin should not be administrated *Vaccinate after pregnation	ne Not applicable tered.		

^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Notes

Notes

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2022

For vaccine recommendations for persons 18 years of age or younger, see the Recommended Child/ Adolescent Immunization Schedule.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

Haemophilus influenzae type b vaccination

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib; if 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

Not at risk but want protection from hepatitis A
 (identification of risk factor not required): 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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- **Pregnancy** if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required)

Hepatitis B vaccination

Routine vaccination

- Unvaccinated persons: 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 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
- -4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of normal adult dose, i.e., 2 mL instead of 1 mL)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

Routine vaccination

- HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:
- 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)
- 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

 Some adults age 27-45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

- Age 19 years or older: 1 dose any influenza vaccine appropriate for age and health status annually
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/rr/rr7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.qov/vaccines/hcp/acip-recs/wacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): I dose if previously did not receive Hib, if elective splenectomy, I dose, preferably at least 14 days before splenectomy
- Hematopoletic 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

Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 or 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Hepatitis 8 vaccination

Routine vaccination

- Unvaccinated persons; complete a 2- or 3-, or 4-dose, series
- 2-dose series only applies when 2 doses of Heplisav-B* an used at least 4 weeks apart
- 3-dose series Engerix-B or Recombivax HB at 0, 1, 6 months [nummum 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 (Twinnx), accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- 4-dose series Engerix-B at 0, 1, 2, and 6 months for person on adult hemodialysis (note: each dosage is double that or pormal adult dose Te. 2 ml. instead of 1 ml.)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

outine vaccination

- HPV vaccination recommended for all persons through age 26 years; 2- or 3-dose series depending on age at initial vaccination or condition;
- Age 15 years or older at initial vaccination: 3-dose serie at 0, 1-2 months, 6 months Iminimum 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)
- 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HP¹ vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

Some adults age 27-45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

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: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination: HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

influenza vaccination

- Age 19 years or older: I dose any influenza vaccin appropriate for age and health status annually.
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/mm/7005a1.html
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib, if elective splenectomy, 1 dose, preferably at least 14 days before splenectomy
- Hematopoletic 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

 Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 mer
- Injection or noninjection drug use
- Persons experiencing homelessnes
- 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 or 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Hepatitis 8 vaccination

Routine vaccination

- Unvaccinated persons; complete a 2- or 3-, or 4-dose series
- 2-dose series only applies when 2 doses of Heplisav-B* an used at least 4 weeks apart
- 3-dose series Engerix-B or Recombivax HB at 0, 1, 6 months [nummum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks]
- 3-dose saries 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 (Twinnx), accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- 4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of pormal adult dose, i.e., 2 ml, instead of 1 ml.)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

outine vaccination

- HPV vaccination recommended for all persons through age 26 years; 2- or 3-dose series depending on age at initial vaccination or condition;
- Age 15 years or older at initial vaccination: 3-dose serie at 0, 1-2 months, 6 months Iminimum 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) 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HP vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

Some adults age 27–45 years: Based on shared clinica decision-making, 2- or 3-dose series as above

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: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination: HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

- Age 19 years or older: I dose any influenza vaccine appropriate for age and health status annually
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/mm/7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/aciprecs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/ vaccines/covid-19/clinical-considerations/covid-19vaccines-us.html.

COVID-19 Vaccination:

Added the phrase: "or as otherwise recommended by ACIP and adopted by the CDC director."

redules: If vaccination schedule is

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib, if elective splenectomy, 1 dose, preferably at least 14 days before splenectomy.
- Hematopoletic 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

Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 homelessnes
- Work with hepatitis A virus in research laboratory or with
- -Travel in countries with high or intermediate endemic hepatitis A [HepA-HepB [Twinrix] may be administered on

COVID-19 Vaccination:

 Added the link to the Interim Clinical Considerations for use of COVID-19 vaccines

developmentally disabled persons (individual risk factor

Hepatitis 8 vaccination

Routine vaccination

- Unvaccinated persons; complete a 2- or 3-, or 4-dose series
- 2-dose series only applies when 2 doses of Heplisav-B+ ar used at least 4-weeks apart
- 3-dose series Engerix-B 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 (Twinnx), accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- 4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of pormal adult dose, i.e., 2 ml, instead of 1 ml.)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

outine vaccination

- HPV vaccination recommended for all persons through age 26 years; 2- or 3-close series depending on age at initial vaccination or condition:
- Age 15 years or older at initial vaccination: 3-dose series at 0, 1-2 months, 6 months Iminimum 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 sconj Age 9-14 years at initial vaccination and received 1 dose or 2 doses less than 5 months apart: 1 additional

rs at initial vaccination and received 2
5 months apart: HPV vaccination series additional dose needed needules: If vaccination schedule is series does not need to be restarted dose recommended when any HPV has been completed using the dosing intervals.

decision-making

je 27–45 years: Based on shared clinical ig, 2- or 3-dose series as above

lons.

- 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: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination: HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

- Age 19 years or older: I dose any influenza vaccine appropriate for age and health status annually.
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/mm7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/wacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib, if elective splenectomy, 1 dose, preferably at least 14 days before splenectomy.
- Hematopoletic 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

Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

 At risk for hepatitis A virus infection; 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 mer
- 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 or 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Hepatitis B vaccination

Routine vaccination

- Unvaccinated persons: 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 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
- 4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of normal adult dose, i.e., 2 mL instead of 1 mL)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

loutine vaccination

- HPV vaccination recommended for all persons through age 26 years; 2- or 3-dose series depending on age at initial vaccination or condition;
- Age 15 years or older at initial vaccination: 3-dose serie at 0, 1-2 months, 6 months iminimum 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 scon).

 Age 9-14 years at initial vaccination and received 1 dose or 3 doses loss than 5 months aparts 1 additional.
- dose or 2 doses less than 5 months apart: 1 additional dose.

 Age 9–14 years at initial vaccination and received 2.
- complete, no additional dose needed Interrupted schedules: If vaccination schedule is
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

Some adults age 27-45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV Infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination: HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

- Age 19 years or older: I dose any influenza vaccin appropriate for age and health status annually.
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/mm/7005a1.html
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/bcp/acip-recs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib, if elective splenectomy, 1 dose, preferably at least 14 days before splenectomy.
- Hematopoletic 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

Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 or 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Hepatitis B vaccination

Routine vaccination

- Unvaccinated persons: 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 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
- -4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of normal adult dose, i.e., 2 mL instead of 1 mL)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

outine vaccination

- HPV vaccination recommended for all persons through age 26 years; 2- or 3-dose series depending on age at initial vaccination or condition;
- Age 15 years or older at initial vaccination: 3-dose serie at 0, 1-2 months, 6 months iminimum 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 scon).

 Age 9-14 years at initial vaccination and received 1
- dose or 2 doses less than 5 months apart: 1 additiona 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

Some adults age 27-45 years: Based on shared clinical

Routine vaccination:

 Clarification of 2, 3, and 4 dose series

Removed "**Special situations**" section, in anticipation of the universal vaccination recommendation.

Ro

- Age 19 years or older: I dose any influenza vaccine appropriate for age and health status annually.
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/mm7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.qov/vaccines/hcp/acip-recs/wacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib, if elective splenectomy, 1 dose, preferably at least 14 days before splenectomy.
- Hematopoletic 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

Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Hepatitis 8 vaccination

Routine vaccination

- Unvaccinated persons; complete a 2- or 3-, or 4-dose series
- 2-dose series only applies when 2 doses of Heplisav-B+ ar used at least 4-weeks apart
- 3-dose series Engerix-B 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 saries 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 (Twinnx), accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- 4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of normal adult dose, i.e., 2 ml, instead of 1 ml.)

*Heplisav-B not recommended in pregnancy due to lack of

Human papillomavirus vaccination

Routine vaccination

- HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:
- 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)
- 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

 Some adults age 27-45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

influenza vaccination

- Age 19 years or older: I dose any influenza vaccine appropriate for age and health status annually.
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/mm/7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

can be found

Routine vaccination

Changed wording for clarity: No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Human papillomavirus vaccination

Routine vaccination

- HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:
- 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)
- Age 9–14 years at initial vaccination and received 1 dose or 2 doses less than 5 months apart: 1 additional
- Age 9–14 years at initial vaccination and received 2 doses at least 5 months apart: HPV vaccination series complete, no additional dose needed
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

 Some adults age 27–45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines-us.html.

- 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 mer
- 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 or 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 (administer dose 1 as soon as adoption is
 planned, at least 2 weeks before adoptee's arrival)

 Pregnancy if at risk for infection or severe outcome from

Special situations

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 Hematopoletic st series 4 weeks apa transplant regard

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Not at risk but w. (identification of r HepA (Havrix 6-1) apart [minimum]

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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- Added wording to "Immunocompromising Conditions" for clarity: 3-dose series as above, when initiating vaccination at age 9–45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
 - 4-dose series HepA-HepB (Twinnx), accelerated schedul of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months.
 - 4-dose series Engerix-B at 0, 1, 2, and 6 months for person on adult hemodialysis (note: each dosage is double that o normal adult dose Te 2 mL instead of 1 mL)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

Routine vaccination

- HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:
- 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)
- 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

 Some adults age 27–45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- **Pregnancy**: Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

- Age 19 years or older: I dose any influenza vaccir appropriate for age and health status annually.
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/mm/7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.qov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines-us.html.

Haemophilus influenzae type b vaccination

Special situations

- Anatomical or functional asplenia (including sickle ce disease): I dose if
- Hematopoletic st series 4 weeks apa

utine vaccin

Not at risk but wi (identification of r HepA (Havrix 6-1) apart [minimum ii HepB (Twinrix at 0 to dose 2: 4 weeks

Special situation

 At risk for hepati or 3-dose series H

- 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 mer
- 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 or 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Special situations

 Rearranged the wording for the "pregnancy" bullet: Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant.

Human papillomavirus vaccination Routine vaccination

HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:

- -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)
- 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HPV vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

 Some adults age 27–45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

Routine vaccination

- Age 19 years or older: I dose any influenza vaccinappropriate for age and health status annually
- For the 2021-2022 season, see www.cdc.gov/mmwr volumes/70/mm7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2022

For vaccine recommendations for persons 18 years of age or younger, see the Recommended Child/ Adolescent Immunization Schedule.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/bcp/acip-tecs/vacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): I dose if previously did not receive Hib, if elective splenectomy, I dose, preferably at least 14 days before splenectomy
- Hematopoletic 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

Not at risk but want protection from hepatitis A (identification of risk factor not required): 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

 At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above

- 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 or 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 habysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Hepatitis 8 vaccination

Routine vaccination

- Unvaccinated persons; complete a 2- or 3-, or 4-dose series
- 2-dose series only applies when 2 doses of Heplisav-B⁺ an used at least 4 weeks apart
- 3-dose series Engerix-B or Recombivax HB at 0, 1, 6 months [nummum 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 (Twinnx) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months
- 4-dose series Engerix-B at 0, 1, 2, and 6 months for persons on adult hemodialysis (note: each dosage is double that of normal adult dose, i.e., 2 ml, instead of 1 ml.)

*Heplisav-B not recommended in pregnancy due to lack of safety data in pregnant women

Human papillomavirus vaccination

outine vaccination

- HPV vaccination recommended for all persons through age 26 years; 2- or 3-dose series depending on age at initial vaccination or condition;
- Age 15 years or older at initial vaccination: 3-dose serie at 0, 1-2 months, 6 months immimum 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)

 Age 9-14 years at initial vaccination and received 1
- 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HP\ vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

Some adults age 27–45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination: HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

- Age 19 years or older: 1 dose any influenza vaccine appropriate for age and health status annually
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/rr/rr7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

Routine vaccination

Changed language: Age 19 years or older

At risk for hepatitis A virus inte

4-dose series Engerix-B at 0, 1, 2, and 6 months for persons

Influenza vaccination

- Age 19 years or older: 1 dose any influenza vaccine appropriate for age and health status annually
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/rr/rr7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

COVID-19 Vaccination

COVID-19 vaccines are recommended within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine, or as otherwise recommended by ACIP and adopted by the CDC director. ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.qov/vaccines/hcp/acip-recs/wacc-specific/covid-19.html.

CDC's interim clinical considerations for use of COVID-19 vaccines can be found at www.cdc.gov/vaccines-us.html.

Haemophilus influenzae type b vaccinatio

Special situations

- Anatomical or functional asplenia (including sickle cell disease): I dose if previously did not receive Hib, if elective splenectomy, I dose, preferably at least 14 days before splenectomy
- Hematopoletic 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

 Not at risk but want p (identification of risk fa HepA (Havrix 6-12 mor apart [minimum interv HepB (Twinrix at 0, 1, 6 to dose 2: 4 weeks / do

Special situations

At risk for hepatitis A or 3-dose series HepA-H

- 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 mer
- Injection or noninjection drug use
- Persons experiencing homelessnes
- 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 habysitting) in first 60 days after arrival from country with high or intermediate endemic hepatitis A (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required).

Hepatitis 8 vaccination

Routine vaccination

- Unvaccinated persons; complete a 2- or 3-, or 4-dose series
- 2-dose series only applies when 2 doses of Heplisav-B⁺ an used at least 4 weeks apart
- 3-dose series Engerix-B or Recombivax HB at 0, 1,6 month. Immimum intervals: dose 1 to dose 2:4 weeks / dose 2 to

Routine vaccination

 Added hyperlink to the 2021-2022 influenza recommendations and a bullet for the 2022-2023 influenza recommendations.

Human papiliomavirus vaccination

loutine vaccination

- HPV vaccination recommended for all persons through age 26 years; 2- or 3-dose series depending on age at initial vaccination or condition;
- Age 15 years or older at initial vaccination: 3-dose series at 0, 1–2 months, 6 months iminimum 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)
- Age 9-14 years at initial vaccination and received 1 dose or 2 doses less than 5 months apart: 1 additiona 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended when any HP¹ vaccine series has been completed using the recommended dosing intervals.

Shared clinical decision-making

Some adults age 27-45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

- Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations
- Immunocompromising conditions, including HIV infection: 3-dose series as above, when initiating vaccination at age 9-45 years. Recommendations for routine and shared clinical decision-making similar to those for persons without immunocompromising conditions.
- Pregnancy: Pregnancy testing is not needed before vaccination: HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

Influenza vaccination

- Age 19 years or older: 1 dose any influenza vaccine appropriate for age and health status annually
- For the 2021-2022 season, see www.cdc.gov/mmwr/ volumes/70/rr/rr7005a1.htm
- For the 2022–23 season, see the 2022–23 ACIP influenza vaccine recommendations.

Recommended Adult Immunization Schedule, United States, 2022

Special situations

- Egg allergy, hives only: any influenza vaccine appropriate for age and health status annually
- Egg allergy-any symptom other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: see Appendix listing contraindications and precautions
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions
- History of Guillain-Barré syndrome within 6 weeks after previous dose of influenza vaccine: Generally, should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

Measles, mumps, and rubella vaccination

Routine vaccination

- No evidence of immunity to measles, mumps, or rubella: 1 dose
- Evidence of immunity: Born before 1957 (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 women 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: 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: 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
- Health care personnel:
- Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
- Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for 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 series MenACWY-D (Menactra, Menveo or MenQuadfi) at least 8 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate 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 MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and 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 decisionmaking, 2-dose series MenB-4C (Bexsero) at least 1 month apart or 2-dose series MenB-FHbp (Trumenba) at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

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: 2-dose primary series MenB-4C (Bexsero) at least one month apart or
- MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- Pregnancy: Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
- For MenB booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see www.cdc.gov/mwwr/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.

Recommended Adult Immunization Schedule, United States, 2022

Special situations

- Egg allergy, hives only: any influenza vaccine appropriate for age and health status annually
- Egg allergy-any symptom other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: see Appendix listing contraindications and precautions
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions
- History of Guillain-Barré syndrome within 6 weeks after previous dose of influenza vaccine: Generally, should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

Measles, mumps, and rubella vaccination

Routine vaccination

- No evidence of immunity to measles, mumps, or rubella: I dose
- Evidence of immunity: Born before 1957 (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 women of childbearing age with no evidence of immunity to rubella: 1 dose
- HIV infection with CD4 percentages ≥ 15% and CD4 count ≥ 200 cells/mm² for at least 6 months and no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart; MMR contraindicated for HIV infection with CD4 percentage <15% or CD4 count < 200 cells/mm²
- Severe immunocompromising conditions: MMFI 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: 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
- · Health care personnel:
- Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
- Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for 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 series MenACWY-D (Menactra, Menveo or MenQuadfi) at least 8 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate every 5 years if risk remains
- First-year college students who live in residential housing (if not previously vaccinated at age 16 years of older) or military recruits: I dose MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningbooccal vaccination information, see www.vdc.gov/

Shared clinical decision-making for Men8

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, 2-dose series MenB-4C (Bexsero) at least 1 month apart or 2-dose series MenB-FHbp (Trumenba) at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

Special situations for Men8

- 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: 2-dose primary series MenB-4C (Bexsero) at least one month apart or
- MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- Pregnancy: Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
- For MenB booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see www.cdc.gov/mmwir/volumes/69/rr/rr6909a1.htm

lote: MenB vaccines may be administered simultaneously with MenACWY vaccines if Indicated, but at a different natomic site, if feasible.

Special situations

- Egg allergy, hives only: any influenza vaccine appropriate for age and health status annually
- Egg allergy-any symptom other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: see Appendix listing contraindications and precautions
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions
- History of Guillain-Barré syndrome within 6 weeks after previous dose of influenza vaccine: Generally, should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

Measles, mumps, and rubella vaccination

Routine vaccination

- No evidence of immunity to measles, mumps, or rubella: I dose
- Evidence of immunity: Born before 1957 (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 women 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: 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: MMF contraindicated

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Special Situations

 Condensed this section. Refer health care providers to the Appendix for more information on contraindications and precautions.

- to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
- Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for 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 series MenACWY-D (Menactra, Menveo or MenQuadfi) at least 8 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate 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: I dose MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see www.vdc.gov/ mmwr/volumes 69/m n6909a1 htm

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6-23 years (age sed risk for ared clinical decisionro) at least 1 month imenba) at 0, 6 is than 6 months 4 months after dose hterchangeable (use

same product for all doses in series

Special situations for Men8

- 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: 2-dose primary series MenB-4C (Bexsero) at least one month apart or
- MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- Pregnancy: Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
- For MenB booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see www.cdc.gov/mmwir/volumes/69 in 16909a1 htm

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

Recommended Adult Immunization Schedule, United States, 2022

Special situations

- Egg allergy, hives only: any influenza vaccine appropriate for age and health status annually
- Egg allergy-any symptom other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: see Appendiculating contraindications and precautions
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine see Appendix listing contraindications and precautions
- History of Guillain-Barré syndrome within 6 weeks after previous dose of influenza vaccine: Generally, should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

Measles, mumps, and rubella vaccination

Routine vaccination

- No evidence of immunity to measles, mumps, or rubella: 1 dose
- Evidence of immunity: Born before 1957 (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 women 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: 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: 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
- Health care personnel:
- Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
- Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for 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 series MenACWY-D (Menactra, Menveo or MenQuadfi) at least 8 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate every 5 years if risk remains
- First-year college students who live in residential housing (if not previously vaccinated at age 16 years of older) or military recruits: I dose MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningpocccal vaccination information, see www.vdc.gov/mmw/volumes/60/r/m6009a1 htm

hared clinical decision-making for Men8

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, 2-dose series MenB-4C (Bexsero) at least 1 month apart or 2-dose series MenB-FHbp (Trumenba) at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

Special situations for Men8

- 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: 2-dose primary series MenB-4C (Bexsero) at least one month apart or
- MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- Pregnancy: Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
- For MenB booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see www.cdc.gov/mmwifyolumes/69 in 16009a1 him

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

Measles, mumps, and rubella vaccination

Routine vaccination

- · No evidence of immunity to measles, mumps, or rubella: 1 dose
- Evidence of immunity: Born before 1957 (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 women 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: 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: 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
- Health care personnel:
- Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
- Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for rubella

Special Situations

Added CD4 percentages in addition to CD4 counts for HIV infection (to harmonize language with child/adolescent schedule)

Recommended Adult Immunization Schedule, United States, 2022

Special situations

- Egg allergy, hives only: any influenza vaccine appropriate for age and health status annually
- Egg allergy-any symptom other than hives le.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: see Appendix listing contraindications and precautions
- Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine see Appendix listing contraindications and precautions
- History of Guillain-Barré syndrome within 6 weeks after previous dose of influenza vaccine: Generally, should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

Measles, mumps, and rubelia vaccination

Routine vaccination

- No evidence of immunity to measles, mumps, or rubella: I dose
- Evidence of immunity: Born before 1957 (health care personnel, see below), documentation of receipt of MMF 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 women 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: 2-dose series at least 4 weeks apart; MMR contraindicated for HIV infection with CD4 percentage <15% or CD4 count < 200 cells/mm³</p>
- 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: 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
- · Health care personnel:
- Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
- Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for 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 series MenACWY-D (Menactra, Menveo or MenQuadfi) at least 8 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidemic meningococcal disease, or microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate 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 MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and 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, 2-dose series MenB-4C (Bexsero) at least 1 month apart or 2-dose series MenB-FHbp (Trumenba) at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

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: 2-dose primary series MenB-4C (Bexsero) at least one month apart or
- MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- Pregnancy: Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
- For MenB booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see www.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.

Added note at end of section stating: "MenB vaccines may be administered simultaneously with MenACWY vaccines if indicated, but at a different anatomic site, if feasible."

- Evidence of immunity: Born before 1957 (health care

Meningococcal

Special situations for MenAC

- Anatomical or functional asplenia () cell disease), HIV infection, persistent component deficiency, complement inh eculizumab, ravulizumab) use: 2-dose serie (Menactra, Menveo or MenQuadfi) at least 8 w and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidel meningococcal disease, or microbiologists routing exposed to Neisseria meningitidis: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate every vears if risk remains

VY-D

- First-year college students who live in residential housing (if not previously vaccinated at age 16 years or older) or military recruits: 1 dose MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and 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 decisionmaking, 2-dose series MenB-4C (Bexsero) at least 1 month apart or 2-dose series MenB-FHbp (Trumenba) at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

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: 2-dose primary series MenB-4C (Bexsero) at least one month apart or
- MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1-2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2-3 years if risk remains
- · Pregnancy: Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
- For MenB booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and among men who have sex with men) and additional meningococcal vaccination information, see www.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.

Recommended Adult Immunization Schedule, United States, 2022

Pneumococcal vaccination

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

 Previously did not receive Tdap at or after age 11 years: 1 dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose), Td or Tdap every 10 years thereafter
- 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

Routine 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 women 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

Special 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 varicellacontaining 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 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
(administer RZV at least 2 months after ZVL)

Special situations

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Pneumococcal vaccination

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: 1 dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36

• Wound management: Persons with 3 or more closes of tetanus-toxoid-containing vaccine: For clean and minor wounds, administer Tdap or Td if more than 10 years since last close of tetanus-toxoid-containing vaccine; for all other wounds, administer Tdap or Td if more than 5 years since last close 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/89 wormm6903a5.htm

Varicella vaccination

Routine 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 women 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.

Special 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 varicellacontaining 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 aparti; VAR contraindicated for HIV infection with CD4 percentage < 15% or CD4 count < 200 cells/mm²
- Severe immunocompromising conditions: VAR contraindicated

Zoster vaccination

Routine vaccination

 Age 50 years or older: 2-dose series 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 (administer RZV at least 2 months after ZVL)

Special situations

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Pneumococcal vaccination

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I dose Tdap during each pregnancy, preferable in early part of gestational weeks 27–36

Routine vaccination

• Changed language to reflect the new recommendations: "Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23."

weeks apart if previously did not receive varicella-containir 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 women 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

Special 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 varicellacontaining 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 aparti: VAR contraindicated for HIV infection with CD4 percentages 15% or CD4 count < 200 cells/mm²
- Severe immunocompromising conditions: VAF contraindicated

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Pneumococcal vaccination

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I 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

Zoster vaccination

Routine vaccination

Routine vaccination

 Added language regarding dosing interval: "For dosing interval between PCV15 and PPSV23, see URL pending."

Varicella vaccination

Routine 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 women 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.

Special 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 varicellacontaining 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 percentages > 15% or CD4 count < 200 cells/mm².
- Severe immunocompromising conditions: VAF contraindicated

Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I 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

Zoster vaccination

outine vaccination

 Age 50 years or older: 2-dose series RZV (Shingrix) 2-6 months apart (minimum interval) 4 weeks; repeat dose if administered too soon), regardless of previous herpes zoste.

Routine vaccination

 Added bullet on guidance for patients who have previously received PCV13 and/or PPSV23.

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• 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-murnps-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 women 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.

Special situations

- Pregnancy with no evidence of Immunity to varicella: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility). I 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 varicellacontaining 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 aparti; VAR contraindicated for HIV infection with CD4 percentage < 15% or CD4 count < 200 cells/mm²
- Severe immunocompromising conditions: VAF contraindicated

o disease or therapy. For detailed information, see URL

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19-64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Special situations

Changed language to reflect the new recommendations: "Age 19-64 years with certain underlying medical conditions or other risk factors who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23."

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19-64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Special situations

Added language regarding dosing interval: "For dosing interval between PCV15 and PPSV23, see URL pending."

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: 1 dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I 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 <a href="https://www.cdc.gov/mmwr.volumes-69.gov/mmwr.g

Varicella vaccination

Routine vaccination

No evidence of immunity to varicella; 2-dose series 4-8
weeks apart if previously did not receive varicella-containing
various (VAR or MMPV frequency required);

Zoster vaccination

outine vaccination

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

Special situations

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Special situations

 Added bullet on guidance for patients who have previously received PCV13 and/or PPSV23.

- 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 varicellacontaining 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/mm² 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/mm²</p>
- Severe immunocompromising conditions: VAF contraindicated

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.

Special situations

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

 Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I 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 <a href="https://www.cdc.gov/mmwr.volumes/69.www.cdc.gov/mwwr.volumes/69.www.cdc.gov/mwwr.gov/mwwr.volumes/69.www.cdc.gov/mwwr.volumes/69.www.cdc.gov/mwwr.gov/mwwr.volumes/69.www.cdc.gov/mwww.cdc.gov/

Varicella vaccination

Routine 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-varicellavaccine] for children), if previously received 1 dose varicella-

Zoster vaccination

Routine vaccination

Age 50 years or older: 2-dose series RZV (Shingrix) 2-6
months apart (minimum interval: 4 weeks, repeat dose if
administered too soon), regardless of previous herpes zostel
or history of zoster vaccine live (ZVL_Zostavax) vaccination
(administer RZV at least 2 months after ZVL)

Special situations

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Added note at end of section stating: "Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant."

count ≥ 200 cells/mm³ with no evidence of immunity: Vaccination may be considered (2 closes 3 months aparti; VAR contraindicated for HIV infection with CD4 percentages 15% or CD4 counts ≥ 200 cells/mm².

Severe immunocompromising conditions: VAR contraindicated

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23 see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending

Special situations

(www.cdc.gov/mmwr/preview/mntwrhtml/mm6140a4.htm

- Age 19-64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pendin.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, hephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: 1 dose Tdap during each pregnancy, preferablin 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 <a href="https://www.cdc.gov/minwr.volumes-69.www.cdc.gov/minwr.vo

Varicella vaccination

Routine 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 women 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

Special 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 varicellacontaining 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</p>
- Severe immunocompromising conditions: VAR contraindicated

Zoster vaccination

Routine vaccination

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

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older whare or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV2 see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pendin.

Special situations

(www.cdc.gov/mmwr/preview/mntwrhtml/mm6140a4.htm

- Age 19–64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20: If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pendin
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, hephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I 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.

Varicella vaccination

Routine 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 women 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

Special 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 varicellacontaining 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

outine vaccination

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

Special situations

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Special Situations

 Added CD4 percentages in addition to CD4 counts for HIV infection (to harmonize language with child/adolescent schedule)

Routine vaccination

- Age 65 years or older who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23 see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending

Special situations

(www.cdc.gov/mmwr/preview/mntwrhtml/mm6140a4.htm

- Age 19-64 years with certain underlying medical conditions or other risk factors* who have not previously received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: I dose PCV15 or I dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pendin.
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, hephiotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cel disease or other hemoglobinopathies, CSF leak, or cochlear implant.

Tetanus, diphtheria, and pertussis vaccination

Routine vaccination

Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). Td or Tdap every 10 years thereafter
- Pregnancy: I dose Tdap during each pregnancy, preferable 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. womm6903a5.htm.

Varicella vaccination

Routine 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 women 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.

Special 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 varicellacontaining 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 aparti: VAR contraindicated for HIV infection with CD4 percentage < 15% or CD4 count < 200 cells/mm²
- Severe immunocompromising conditions: VAR contraindicated

Zoster vaccination

Routine vaccination

Age 50 years or older: 2-dose series 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
(administer RZV at least 2 months after ZVL)

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Wound management: Persons with 3 or more doses of tetanus-toxoid-containing vaccine; For clean and minor

Routine

Age 65 ye a prieumo vaccinatio PCV20, If P of PPSV23 see URL pe For guidar

Special s (www.cdc.

- Age 19-6

Special Situations

Revised the language for the pregnancy bullet: "There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy."

- received a pneumococcal conjugate vaccine or whose previous vaccination history is unknown: 1 dose PCV15 or 1 dose PCV20. If PCV15 is used, this should be followed by a dose of PPSV23. For dosing interval between PCV15 and PPSV23, see URL pending.
- For guidance for patients who have already received a previous dose of PCV13 and/or PPSV23, see URL pending
- *Note: Underlying medical conditions or other risk factors include alcoholism, chronic heart/liver/lung disease, cigarette smoking, diabetes mellitus, chronic renal failure, hephrotic syndrome, immunodeficiency, latrogenic immunosuppression, generalized malignancy, HIV, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease or other hemoglobinopathies, CSF leak, or cochlear implant.

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Routine vaccination

Previously did not receive Tdap at or after age 11 years: dose Tdap, then Td or Tdap every 10 years

Special situations

- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose). To or Tdap every 10 years thereafter
- Pregnancy: I dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36

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-murrips-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 women 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.

Special 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 varicellacontaining 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 aparti: VAR contraindicated for HIV infection with CD4 percentage < 15% or CD4 count < 200 cells/mm²
- Severe immunocompromising conditions: VAR contraindicated

Zoster vaccination

Routine vaccination

Age 50 years or older: 2-dose series 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
(administer RZV at least 2 months after ZVL)

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL pending.

Special Situations

Added language to reflect the new recommendations for immunocompromising conditions: "RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy."

Zoster vaccination

Routine vaccination

 Age 50 years or older: 2-dose series 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 (administer RZV at least 2 months after ZVL)

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including HIV): RZV recommended for use in persons age 19 years or older who are or will be immunodeficient or immunosuppressed due to disease or therapy. For detailed information, see URL

Appendix

Recommended Adult Immunization Schedule, United States, 2022

and Precautions to Commonly Used Vaccines

mittee on Immunization Practices (ÁCIP) General Best Practice Guidelines for Immunization: Contraindication from Table 4-1 in Adviso /vaccines/hcp/acip-recs/general-recs/contraindications.html and ACIP's Recommendations for the evention and Control of 2021-22 seaso influenza with Vaccines available at www.cdc.gov/mmwr/volumes/70/rr/rr7005a1.htm

Interim clinical considerations for us of COVID-19 vaccines including contraindications and precautions can be found at www.cdc.gov/vaccines/covid-19/clini considerations/covid-19-vaccines-us.html

Vaccine	Contraindic
Influenza, egg-based, inactivated injectable (II	Severe alle Influenza v

valency)

Severe allere

n (e.g., anaphylaxis) after previous dose of any any egg-based IIV, ccIIV, RIV, or LAIV of any

Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine

Persons with egg allergy with symptoms other than on (e.g., anaphylaxis) to any vaccine component³ hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.

Precautions²

Moderate or severe acute illness with or without fever

Influenza, cell culture-based inactivated injectable (ccllV4). Flucelvax* Quadrivalent1

• Severe allergic reaction (e.g., anaphylaxis) to any ccIIV of any valency, or • Guillain-Barré syndrome (GBS) within 6 weeks after a to any component3 of ccIIV4

- previous dose of any type of influenza vaccine
- 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.
- · Moderate or severe acute illness with or without fever

Influenza, recombinant injectable [(RIV4), Flublok® Quadrivalent]

- Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component3 of RIV4
- Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine
- · Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, ccIIV, 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.
- Moderate or severe acute illness with or without fever

Influenza, live attenuated [LAIV4, Flumist® Quadrivalent]

- Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency)
- Severe allergic reaction (e.g., anaphylaxis) to any vaccine component³ (excluding egg)
- Adults age 50 years or older
- · Anatomic or functional asplenia
- · Immunocompromised due to any cause including, but not limited to, medications and HIV infection
- Close contacts or caregivers of severely immunosuppressed persons who require a protected environment
- Pregnancy
- Cochlear implant
- · Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear or any other cranial CSF leak
- · 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.

- · Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine
- Asthma in persons aged 5 years old or older
- Persons with egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: Any influenza vaccine appropriate for age and health status may be administered. If using LAIV4 (which is egg based), administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.
- 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)]
- · Moderate or severe acute illness with or without fever
- . 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
- . 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/
- 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-unitedstatesexternal icon.



Recommended Adult Immunization Schedule, United States, 2022

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 available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html and ACIP's Recommendations for the Prevention and Control of 2021-22 seasonal influenza with Vaccines available at www.cdc.gov/mmwr/volumes/70/rr/rr7005a1.htm

Interim clinical considerations for use of COVID-19 vaccines including contraindications and precautions can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html

Appendix

Recommended Adult Immunization Schedule, United States, 2022

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 available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html and ACIP's Recommendations for the Prevention and Control of 2021-22 seasonal influenza with Vaccines available at www.cdc.gov/mmwr/volumes/70/rr/rr7005a1.htm

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Recommended Adult Immunization Schedule, United States, 2022

Guide to Contraindications and Precautions to Commonly Used Vaccines

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Interim clinical considerations for use of COVID-19 vaccines including contraindications and precautions can be found at www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html

Vaccine	Contraindications ¹	Precautions ²
Influenza, egg-based, inactivated injectable (IIV4)	 Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any 	 Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine
	valency) • Severe allergic reaction (e.g., anaphylaxis) to any vaccine component³ (excluding egg)	 Persons with egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress) or required epinephrine or another emergency medical intervention: Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist. Moderate or severe acute illness with or without fever
Influenza, cell culture-based inactivated injectable	• Severe allergic reaction (e.g., anaphylaxis) to any ccllV of any valency, or to any component ³ of ccllV4	Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine
[(ccllV4), Flucelvax® Quadrivalent]		 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.
		 Moderate or severe acute illness with or without fever

Vaccine	Contraindications ¹	Precautions ²			
nfluenza, recombinant njectable [(RIV4), Flublok®	 Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component³ of RIV4 	 Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine 			
Quadrivalent]		 Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg- based IIV, ccIIV, 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. 			
		• Moderate or severe acute illness with or without fever			
Influenza, live attenuated [LAIV4, Flumist® Quadrivalent]	 Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any 	 Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine 			
	valency)	 Asthma in persons aged 5 years old or older 			
	 Severe allergic reaction (e.g., anaphylaxis) to any vaccine component³ (excluding egg) 	 Persons with egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress) or required 			
	Adults age 50 years or older	epinephrine or another emergency medical intervention:			
	 Anatomic or functional asplenia 	Any influenza vaccine appropriate for age and health status may be administered. If using LAIV4 (which is egg			
	 Immunocompromised due to any cause including, but not limited to, medications and HIV infection 	based), administer in medical setting under supervision of health care provider who can recognize and manage			
	 Close contacts or caregivers of severely immunosuppressed persons who require a protected environment 	severe allergic reactions. May consult an allergist. • Persons with underlying medical conditions (other			
	Pregnancy	than those listed under contraindications) that might			
	Cochlear implant	predispose to complications after wild-type influenza virus infection [e.g., chronic pulmonary, cardiovascular			
	 Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear or any other cranial CSF leak 	(except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes			
	 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. 	mellitus)] • Moderate or severe acute illness with or without fever			

Appendix Recommended Adult Immunization Schedule, United States, 2022

Vacr*	Constitutions ¹	Precautions ²
nophilus influenzae type b	Severe all component component	Moderate or severe acute illness with or without fever
	For Hiberix, Acthord PedvaxHIB only: History of severe allergic reaction to dry natural latex	
Hepatitis A (HepA)	Severe allergic reaction component ³ including the component ³ including the component includin	Moderate or severe acute illness with or without fever
Hepatitis B (HepB)	Severe allergic reaction component? including y For Heplisav-B only: Pres ncy	Moderate or severe acute illness with or without fever
Hepatitis A-Hepatitis B vaccine [HepA-HepB, (Twinrix*)]	Severe allergic reaction (anaphylaxis) after a previous dose or to a vaccine component including a mycin and yeast	Moderate or severe acute illness with or without fever
Human papillomavirus (HPV)	Severe allergic reaction g, anaphylaxis) after a previous dose or to a vaccine component ³	Moderate or severe acute illness with or without fever
Measles, mumps, rubella (MMR)	Severe allergic reac (e.g., anaphylaxis) after a previous dose or to a vaccine component	Recent (<11 months) receipt of antibody-containing blood product (specific interval depends on product)
	Severe immune ficiency (e.g., hematologic and solid tumors, receipt of chemothe congenital immunodeficiency, long-term immunosuppressive	History of thrombocytopenia or thrombocytopenic purpura
	Retients with HIV infection who are severely immunocompromised)	Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing
	Family history of altered immunocompetence, unless verified clinically or by	Moderate or severe acute illness with or without fever
	laboratory testing as immunocompetent	
Meningococcal ACWY (MenACWY)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever
[MenACWY-CRM (Menveo*); MenACWY-D (Menactra*);	 For MenACWY-D and Men ACWY-CRM only: severe allergic reaction to any diphtheria toxoid—or CRM197—containing vaccine 	
MenACWY-TT`(MenQuadfif*)]	For MenACWY-TT only: severe allergic reaction to a tetanus toxoid-containing vaccine	
Meningococcal B (MenB)	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine	Pregnancy
[MenB-4C (Bexsero); MenB-FHbp [Trumenba)]	component ^a	For MenB-4C only: Latex sensitivity
		Moderate or severe acute illness with or without fever
Pneumococcal conjugate (PCV15)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component^a 	Moderate or severe acute illness with or without fever
	 Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid – containing vaccine or to its vaccine component³ 	
Pneumococcal conjugate (PCV20)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever
	 Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid—containing vaccine or to its vaccine component³ 	
Pneumococcal polysaccharide (PPSV23)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever
Tetanus, diphtheria, and acellular pertussis (Tdap)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	 Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus-toxoid—containing vaccine
Tetanus, diphtheria (Td)	 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 	 History of Arthus-type hypersensitivity reactions after a previor dose of diphtheria-toxoid— containing or tetanus-toxoid— containing vaccine; defer vaccination until at least 10 years ha 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 component³ 	Recent (<11 months) receipt of antibody-containing blood product (specific interval depends on product)
	 Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosupressive therapy or patients with HIV infection who are severely immunocompromised) 	 Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
	Pregnancy	Use of aspirin or aspirin-containing products
	Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent	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	Moderate or severe acute illness with or without fever Current herpes zoster infection

- 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
- 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
- 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-statesexternal icon.

Vaccine	Contraindications ¹	Precautions ²
Haemophilus influenzae type b (Hib)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever
	 For Hiberix, ActHib, and PedvaxHIB only: History of severe allergic reaction to dry natural latex 	
Hepatitis A (HepA)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 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 component³ including yeast 	Moderate or severe acute illness with or without fever
	For Heplisav-B only: Pregnancy	
Hepatitis A- Hepatitis B vaccine [HepA-HepB, (Twinrix®)]	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 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 component³ 	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 component³ 	 Recent (≤11 months) receipt of antibody-containing blood product (specific interval depends on product)
	Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of	 History of thrombocytopenia or thrombocytopenic purpura
	chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised)	 Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing
	• Pregnancy	 Moderate or severe acute illness with or without fever
	 Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent 	

Vaccine	Contraindications ¹	Precautions ²
Meningococcal ACWY (MenACWY)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever
[MenACWY-CRM (Menveo®); MenACWY-D (Menactra®); MenACWY-TT (MenQuadfi®)]	 For MenACWY-D and Men ACWY-CRM only: severe allergic reaction to any diphtheria toxoid— or CRM197—containing vaccine 	
MenAcwi-ii (Mengadan)]	 For MenACWY-TT only: severe allergic reaction to a tetanus toxoid-containing vaccine 	
Meningococcal B (MenB)	Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine	Pregnancy
[MenB-4C (Bexsero); MenB-FHbp (Trumenba)]	component ³	 For MenB-4C only: Latex sensitivity
(Turneriba)		 Moderate or severe acute illness with or without fever
Pneumococcal conjugate (PCV15)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever
	 Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid – containing vaccine or to its vaccine component³ 	
Pneumococcal conjugate (PCV20)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever
	 Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid – containing vaccine or to its vaccine component³ 	
Pneumococcal polysaccharide (PPSV23)	 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 	Moderate or severe acute illness with or without fever

Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ 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 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 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 Fish of Tdap only: Progressitivity 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 on 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 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 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 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 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 For Tap only: Pr	Vaccine	Contraindications ¹	Precautions ²
Particular of Integrating High ground and Service of Common and Service of Se	pertussis (Tdap)		
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 component³ 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 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine Moderate or severe acute illness with or without fever	Tetanus, diphtheria (1d)	prolonged seizures), not attributable to another identifiable cause, within 7 days	dose of diphtheria-toxoid— containing or tetanus-toxoid— containing vaccine; defer vaccination until at least 10 years have
Use of aspirin or aspirin-containing products Varicella (VAR) • Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component³ • 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 Zoster recombinant vaccine Only Application Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine cuncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized • 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			 Moderate or severe acute illness with or without fever
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 Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine components 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			uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has
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 Zoster recombinant vaccine OPTIMA components chemotherapy, congenital immunodeficiency, long-term immunosuppressive 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 • Moderate or severe acute illness with or without fever	Varicella (VAR)		
• Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine • Moderate or severe acute illness with or without fever • Moderate or severe acute illness with or without fever • Moderate or severe acute illness with or without fever		chemotherapy, congenital immunodeficiency, long-term immunosuppressive	valacyclovir) 24 hours before vaccination (avoid use of these
Iaboratory testing as immunocompetent		• Pregnancy	Use of aspirin or aspirin-containing products
(D7V)			Moderate or severe acute illness with or without fever
(RZV) • Current herpes zoster infection			Moderate or severe acute illness with or without fever
	(RZV)	component ³	Current herpes zoster infection

- 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-statesexternal icon.

Thank You! Questions?

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

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



Back-up slides

2021 Child/Adolescent Immunization Schedule

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

UNITED STATES

Vaccines in the Child and Adolescent Immunization Schedule*

Vaccines	Abbreviations	Trade names
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel ^e Infanrix ^e
Diphtheria, tetanus vaccine	DT	No trade name
Haemophilus influenzae type b vaccine	Hib (PRP-T) Hib (PRP-OMP)	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	НерА	Havrix ^e Vaqta ^e
Hepatitis B vaccine	НерВ	Engerix-B ^o Recombivax HB ^o
Human papillomavirus vaccine	HPV	Gardasil 9 ^a
Influenza vaccine (inactivated)	IIV	Multiple
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadriva
Measles, mumps, and rubella vaccine	MMR	M-M-R II*
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra*
	MenACWY-CRM	Menveo*
	MenACWY-TT	MenQuadfi*
Meningococcal serogroup B vaccine	MenB-4C	Bexsero*
	MenB-FHbp	Trumenba*
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13 ^e
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23 ^e
Poliovirus vaccine (inactivated)	IPV	IPOL*
Rotavirus vaccine	RV1 RV5	Rotarix ^e RotaTeq ^e
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel ^e Boostrix ^e
Tetanus and diphtheria vaccine	Td	Tenivac* Tdvax™
Varicella vaccine	VAR	Varivax ^e

Combination vaccines (use combination vaccines instead of separate injections when appropriate) DTaP, hepatitis B, and inactivated poliovirus vaccine DTaP-HepB-IPV Pediarix® DTaP-IPV/Hib DTaP, inactivated poliovirus, and Haemophilus influenzae type b vaccine Pentacel[®] DTaP and inactivated poliovirus vaccine DTaP-IPV Kinrix* Quadracel® Vaxelis* DTaP, inactivated poliovirus, Haemophilus influenzae type b, and hepatitis B vaccine DTaP-IPV-Hib-HepB MMRV ProQuad* Measles, mumps, rubella, and varicella vaccine

How to use the child/adolescent immunization schedule

Determine recommended vaccine by age (Table 1)

Determine recommended interval for catch-up vaccination (Table 2)

Assess need for additional recommended vaccines by medical condition and other indications situations

(Table 3)

Review vaccine types, frequencies, intervals, and considerations for special (Notes)

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American Academy of Pediatrics (www.aap.org), American Academy of Family Physicians (www.aafp.org), American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), American Academy of Physician Assistants (www.aapa.org), and National Association of Pediatric Nurse Practitioners (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 or 800-822-7967



Download the CDC Vaccine Schedules App for providers at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html.

Helpful information

- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization:
- www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Outbreak information (including case identification and outbreak response), see Manual for the Surveillance of Vaccine-Preventable Diseases: www.cdc.gov/vaccines/pubs/surv-manual
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip-scdm-fags.html



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

^{*}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.



Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021

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). School entry and adolescent vaccine are groups are shaded in gray.

Vaccine	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 yı
lepatitis B (HepB)	1 st dose	∢ 2 nd (dose▶		←		– 3 rd dose –										
otavirus (RV): RV1 (2-dose eries), RV5 (3-dose series)			1 st dose	2 nd dose	See Notes												
iphtheria, tetanus, acellular ertussis (DTaP <7 yrs)			1st dose	2 nd dose	3 rd dose			◄ 4 th d	ose▶			5 th dose					
laemophilus influenzae type b Hib)			1st dose	2 nd dose	See Notes		43 rd or 4 rd See N	^h dose₄ ▶ Notes									
neumococcal conjugate PCV13)			1 st dose	2 nd dose	3™ dose		◄ 4 th 0	lose —–▶									
nactivated poliovirus IPV <18 yrs)			1 st dose	2 nd dose	←		– 3 rd dose –					4 th dose					
nfluenza (IIV)							A	nnual vaccir	nation 1 or	2 doses			OT-		vaccination		ily
nfluenza (LAIV4)												vaccinatio r 2 doses			vaccination		
Measles, mumps, rubella (MMR)					See I	Votes	4 1 st d	lose				2 nd dose					
'aricella (VAR)							4 1 st d	lose▶				2 nd dose					
lepatitis A (HepA)					See I	Votes	1	2-dose serie	s, See Note	s							
etanus, diphtheria, acellular pertussis (Tdap ≥7 yrs)														Tdap			
luman papillomavirus (HPV)														See Notes			
MenIngococcal (MenACWY-D ±9 mos, MenACWY-CRM ≥2 mos, MenACWY-TT ≥2years)								See Notes						1# dose		2 nd dose	
Meningococcal B													ч		See Note	is	
neumococcal polysaccharide PPSV23)														See Notes			
Range of recommended ages for all children		Range for cat	of recommo	ended ages inization			of recomm n high-risk (for	decisi	nmended b on-making he used in t				No recomme not applicab		

Table 2

Recommended Catch-up Immunization Schedule for Children and Adolescents Who Start Late or Who Are More

than 1 month Behind, United States, 2021

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		Minimum Interval Between Doses		
	Dose 1	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose
lepatitis B	Birth	4 weeks	8 weeks and at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.		
Rotavirus	6 weeks Maximum age for first dose is 14 weeks, 6 days.	4 wooks	4 weeks Maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and scellular pertussis	6 weeks	4 weeks	4 weeks	6 months	6 months
Haemophilus influenzae type b	6 weeks	No further doses needed if first dose was administered at age 15 months or older. 4 weeks if first dose was administered before the 1st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months.	No further doses needed if previous dose was administered at age 15 months or older. 4 weeks if current age is younger than 12 months and first dose was administered at younger than age 7 months and at least 1 previous dose was PRP-T (ActHib, Pentacel, Hiberix) or unknown. 8 weeks and age 12 through 59 months (as final dose) if current age is younger than 12 months and first dose was administered at age 7 through 11 months; OR if current age is 12 through 59 months and first dose was administered before the 1 st birthday and second dose was administered at younger than 15 months; OR if both doses were PRP-OMP (PedvaxHIB, Comvax) and were administered before the 1 st birthday.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before the 1 st birthday.	
Pneumococcal conjugate	6 weeks	No further doses needed for healthy children if first dose was administered at age 24 months or older. 4 weeks if first dose was administered before the 1st birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1st birthday or after.	No further doses needed for healthy children if previous dose was administered at age 24 months or older. 4 weeks if current age is younger than 12 months and previous dose was administered at <7 months old. 8 weeks (as final dose for healthy children)	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
nactivated poliovirus	6 weeks	4 weeks	4 weeks if current age is <4 years. 6 months (as final dose) if current age is 4 years or older.	6 months (minimum age 4 years for final dose).	
Measles, mumps, rubella	12 months	4 weeks	, , , , , , , , , , , , , , , , , , , ,		
aricella	12 months	3 months			
lepatitis A	12 months	6 months			
Meningococcal ACWY	2 months MenACWY- CRM 9 months MenACWY-D 2 years MenACWY-TT	8 weeks	See Notes	See Notes	
			Children and adolescents age 7 through 18 years		Į.
Meningococcal ACWY	Not applicable (N/A)	8 weeks	/		
Tetanus, diphtheria; tetanus, diphtheria, and ocellular pertussis	7 years	4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday.	6 months if first dose of DTaP/ DT was administered before the 1th birthday.	
łuman papillomavirus	9 years	Routine dosing intervals are recommended.			
lepatitis A	N/A	6 months			
epatitis B	N/A	4 weeks	8 weeks and at least 16 weeks after first dose.		
nactivated poliovirus	N/A	4 weeks	6 months A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella	N/A	4 weeks			
/aricella	N/A	3 months if younger than age 13 years. 4 weeks if age 13 years or older.			

Table 3 Recommended Child and Adolescent Immunization Schedule by Medical Indication, United States, 2021

Always use this table in conjunction with Table 1 and the notes that follow.

					IN	DICATION				
VACCINE	Pregnancy	Immunocom- promised status (excluding HIV infection)	HIV infection <15% and total CD4 cell count of <200/mm ³	CD4+ count¹ ≥15% and total CD4 cell count of ≥200/mm³	Kidney failure, end-stage renal disease, or on hemodialysis	Heart disease or chronic lung disease	CSF leak or cochlear implant	Asplenia or persistent complement component deficiencies	Chronic liver disease	Diabete
Hepatitis B										
Rotavirus		SCID ²								
Diphtheria, tetanus, and acellular pertussis (DTaP)										
Haemophilus influenzae type b										
Pneumococcal conjugate										
Inactivated poliovirus										
Influenza (IIV)										
Influenza (LAIV4)						Asthma, wheezing: 2–4yrs²				
Measles, mumps, rubella	*									
Varicella	*									
Hepatitis A										
Tetanus, diphtheria, and acellular pertussis (Tdap)										
Human papillomavirus	*									
Meningococcal ACWY										
Meningococcal B										
Pneumococcal polysaccharide										
Vaccination according routine schedule recommended	F	lecommended for persons with an additio isk factor for which the raccine would be indica	nal and	cination is recomi additional doses essary based on r dition. See Notes.	may be cont nedical show	recommended/ raindicated—vaccine ild not be administered. cinate after pregnancy.		cated if benefit applic outweighs risk	commendat cable	ion/not

¹ 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 and Table 4-1 (footnote D) at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

² Severe Combined Immunodeficiency

³ LAIV4 contraindicated for children 2–4 years of age with asthma or wheezing during the preceding 12 months



Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021

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

Additional information

COVID-19 Vaccination

ACIP recommends use of COVID-19 vaccines within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine. Interim ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/.

- Consult relevant ACIP statements for detailed recommendations at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- For information on contraindications and precautions for the use of a vaccine, consult the General Best Practice Guidelines for Immunization at www.cdc.gov/vaccines/hcp/acip-recs/generalrecs/contraindications.html and relevant ACIP statements at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- 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 as age appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see Table 3-1, Recommended and minimum ages and intervals between vaccine doses, in General Best Practice Guidelines for Immunization at www.cdc.gov/vaccines/hcp/aciprecs/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/generalrecs/immunocompetence.html, and Immunization in Special Clinical Circumstances (In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. 31st ed. Itasca, IL: American Academy of Pediatrics; 2018:67-111).
- For information about vaccination in the setting of a vaccinepreventable 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 routine child and adolescent vaccines are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information, see www.hrsa.gov/ vaccinecompensation/index.html.

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

Routine vaccination

- 5-dose series at 2, 4, 6, 15–18 months, 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 4th 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/tr/rr6702a1.htm.

Haemophilus Influenzae type b vaccination (minimum age: 6 weeks)

Routine vaccination

- ActHIB, Hiberix, or Pentacel: 4-dose series at 2, 4, 6, 12– 15 months
- PedvaxHIB: 3-dose series at 2, 4, 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) 8 weeks after dose 2.
- 2 doses of PedvaxHIB before age 12 months: Administer dose 3 (final dose) at 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.
- 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.

Special situations

Chemotherapy or radiation treatment: 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):

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:

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:

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)

Notes

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021

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

Routine vaccination

 2-dose series (minimum interval: 6 months) beginning at age 12 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/):
- 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)

Birth dose (monovalent HepB vaccine only)

- Mother is HBsAg-negative: 1 dose within 24 hours of birth for all medically stable infants ≥2,000 grams. Infants <2,000 grams: Administer 1 dose at chronological age 1 month or hospital discharge (whichever is earlier and even if weight is still <2,000 grams).
- Mother is HBsAg-positive:
- Administer HepB vaccine and hepatitis B immune globulin (HBIG) (in separate limbs) within 12 hours of birth, regardless of birth weight. For infants <2,000 grams, administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
- Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.
- Mother's HBsAg status is unknown:
- Administer HepB vaccine within 12 hours of birth, regardless of birth weight.
- For infants <2,000 grams, administer HBIG in addition to HepB vaccine (in separate limbs) within 12 hours of birth. Administer 3 additional doses of vaccine (total of 4 doses) beginning at age 1 month.
- Determine mother's HBsAg status as soon as possible. If mother is HBsAg-positive, administer HBIG to infants ≥2,000 grams as soon as possible, but no later than 7 days of age.

Routine series

- 3-dose series at 0, 1-2, 6-18 months (use monovalent HepB vaccine for doses administered before age 6 weeks)
- Infants who did not receive a birth dose should begin the series as soon as feasible (see Table 2).
- Administration of 4 doses is permitted when a combination vaccine containing HepB is used after the birth dose.

- Minimum age for the final (3rd or 4th) dose: 24 weeks
- Minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks (when 4 doses are administered, substitute "dose 4" for "dose 3" in these calculations)

Catch-up vaccination

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, 6 months.
- 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 or older may receive a 2-dose series of HepB (Heplisav-B*) at least 4 weeks apart.
- 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).
- For other catch-up guidance, see Table 2.

Special situations

- Revaccination is not generally recommended for persons with a normal immune status who were vaccinated as infants, children, adolescents, or adults.
- Revaccination may be recommended for certain populations, including:
- Infants born to HBsAq-positive mothers
- Hemodialysis patients
- Other immunocompromised persons
- For detailed revaccination recommendations, see www.cdc.gov/ vaccines/hcp/acip-recs/vacc-specific/hepb.html.

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)
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted.
- No additional dose recommended after completing series with recommended dosing intervals using any HPV vaccine.

Special situations

- İmmunocompromising conditions, including HIV infection:
 3-dose series as above
- History of sexual abuse or assault: Start at age 9 years.
- Pregnancy: HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

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:
- 2 dosés, separated by at least 4 weeks, for children age 6 months-8 years who have received fewer than 2 influenza vaccine doses before July 1, 2020, or whose influenza vaccination history is unknown (administer dose 2 even if the child turns 9 between receipt of dose 1 and dose 2)
- 1 dose for children age 6 months-8 years who have received at least 2 influenza vaccine doses before July 1, 2020
- 1 dose for all persons age 9 years or older
- For the 2021–22 season, see the 2021–22 ACIP influenza vaccine recommendations.

- Egg allergy, hives only: Any influenza vaccine appropriate for age and health status annually
- Egg allergy with symptoms other than hives (e.g., angioedema, respiratory distress, need for emergency medical services or epinephrine): Any influenza vaccine appropriate for age and health status annually. If using an influenza vaccine other than Flublok or Flucelvax, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- Severe allergic reactions to vaccines can occur even in the absence of a history of previous allergic reaction. All vaccination providers should be familiar with the office emergency plan and certified in cardiopulmonary resuscitation.
- A previous severe allergic reaction to influenza vaccine is a contraindication to future receipt of any influenza vaccine.
- LAIV4 should not be used in persons with the following conditions or situations:
- History of severe allergic reaction to a previous dose of any influenza vaccine or to any vaccine component (excluding egg, see details above)
- Receiving aspirin or salicylate-containing medications
- Age 2-4 years with history of asthma or wheezing
- Immunocompromised due to any cause (including medications and HIV infection)
- Anatomic or functional asplenia
- Close contacts or caregivers of severely immunosuppressed persons who require a protected environment
- Pregnancy
- Cochlear implant
- Cerebrospinal fluid-oropharyngeal communication
- Children less than age 2 years
- 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



Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021

Measles, mumps, and rubella vaccination (minimum age: 12 months for routine vaccination)

Routine vaccination

- 2-dose series at 12–15 months, 4–6 years
- . Dose 2 may be administered as early as 4 weeks after dose 1.

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

Meningococcal serogroup A,C,W,Y vaccination (minimum age: 2 months [MenACWY-CRM, Menveo], 9 months [MenACWY-D, Menactra], 2 years [MenACWY-TT, MenQuadfi])

Routine vaccination

2-dose series at 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 8 weeks: 4-dose series at 2, 4, 6, 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
- Menactra
- Persistent complement component deficiency or complement inhibitor use:
- · Age 9-23 months: 2-dose series at least 12 weeks apart
- Age 24 months or older: 2-dose series at least 8 weeks apart
 Anatomic or functional asplenia, sickle cell disease, or HIV
- Anatomic or functional asplenia, sickle cell disease, or HI infection:
- · Age 9-23 months: Not recommended
- · Age 24 months or older: 2-dose series at least 8 weeks apart
- Menactra must be administered at least 4 weeks after completion of PCV13 series.

MenQuadfi

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

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

- Children less than age 24 months:
- Menveo (age 2–23 months)
- Dose 1 at age 8 weeks: 4-dose series at 2, 4, 6, 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)

Menactra (age 9-23 months)

- 2-dose series (dose 2 at least 12 weeks after dose 1; dose 2 may be administered as early as 8 weeks after dose 1 in travelers)
- Children age 2 years or older: 1 dose Menveo, Menactra, or MenQuadfi

First-year college students who live in residential housing (if not previously vaccinated at age 16 years or older) or military recruits:

 1 dosé Menveo, Menactra, or MenQuadfi 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 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.

Note: Menactra should be administered either before or at the same time as DTaP. 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.

Meningococcal serogroup B vaccination (minimum age: 10 years [MenB-4C, Bexsero; MenB-FHbp, Trumenba])

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: 2-dose series at least 1 month apart
- Trumenba: 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.

Special situations

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

- Bexsero: 2-dose series at least 1 month apart
- Trumenba: 3-dose series at 0. 1–2. 6 months

Bexsero and **Trumenba** 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.

Pneumococcal vaccination (minimum age: 6 weeks [PCV13], 2 years [PPSV23])

Routine vaccination with PCV13

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

Catch-up vaccination with PCV13

- 1 dose for healthy children age 24–59 months with any incomplete* PCV13 series
- For other catch-up guidance, see Table 2.

Special situations

Underlying conditions below: When both PCV13 and PPSV23 are indicated, administer PCV13 first. PCV13 and PPSV23 should not be administered during same visit.

Chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma treated with high-dose, oral corticosteroids); diabetes mellitus:

Age 2-5 years

- Anv incomplete* series with:
- -3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
- Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after completing all recommended PCV13 doses)

Age 6–18 years

 No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after completing all recommended PCV13 doses)

Cerebrospinal fluid leak, cochlear implant:

Age 2-5 years

- Any incomplete* series with:
- 3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
- Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)

Age 6-18 years

- No history of either PCV13 or PPSV23: 1 dose PCV13, 1 dose PPSV23 at least 8 weeks later
- Any PCV13 but no PPSV23: 1 dose PPSV23 at least 8 weeks after the most recent dose of PCV13
- PPSV23 but no PCV13: 1 dose PCV13 at least 8 weeks after the most recent dose of PPSV23

Notes

Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2021

Sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiency; HIV infection; chronic renal failure; nephrotic syndrome; malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and other diseases associated with treatment with immunosuppressive drugs or radiation therapy; solid organ transplantation; multiple myeloma:

Age 2-5 years

- · Any incomplete* series with:
- 3 PCV13 doses: 1 dose PCV13 (at least 8 weeks after any prior PCV13 dose)
- Less than 3 PCV13 doses: 2 doses PCV13 (8 weeks after the most recent dose and administered 8 weeks apart)
- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose) and a 2nd dose of PPSV23 5 years later

Age 6-18 years

- No history of either PCV13 or PPSV23: 1 dose PCV13, 2 doses PPSV23 (dose 1 of PPSV23 administered 8 weeks after PCV13 and dose 2 of PPSV23 administered at least 5 years after dose 1 of PPSV23)
- Any PCV13 but no PPSV23: 2 doses PPSV23 (dose 1 of PPSV23 administered 8 weeks after the most recent dose of PCV13 and dose 2 of PPSV23 administered at least 5 years after dose 1 of PPSV23)
- PPSV23 but no PCV13: 1 dose PCV13 at least 8 weeks after the most recent PPSV23 dose and a 2rd dose of PPSV23 administered 5 years after dose 1 of PPSV23 and at least 8 weeks after a dose of PCV13

Chronic liver disease, alcoholism:

Age 6-18 years

- No history of PPSV23: 1 dose PPSV23 (at least 8 weeks after any prior PCV13 dose)
- *Incomplete series = Not having received all doses in either the recommended series or an age-appropriate catch-up series See Tables 8, 9, and 11 in the ACIP pneumococcal vaccine recommendations (www.cdc.gov/mmwr/pdf/rr/rr5911.pdf) for complete schedule details.

Pollovirus 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.
- IPV is not routinely recommended for U.S. residents age 18 years or older.

Series containing oral polio 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_%20 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.
- For other catch-up guidance, see Table 2.

Rotavirus vaccination (minimum age: 6 weeks)

Routine vaccination

- . Rotarix: 2-dose series at 2 and 4 months
- RotaTeq: 3-dose series at 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

- Adolescents age 11-12 years: 1 dose Tdap
- Pregnancy: 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36
- Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

Catch-up vaccination

- Adolescents age 13–18 years who have not received Tdap:
 1 dose Tdap, then Td or Tdap booster every 10 years
- Persons 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:
- Children age 7–9 years who receive Tdap should receive the routine Tdap dose at age 11–12 years.
- Children age 10 years who receive Tdap do not need the routine Tdap dose at age 11–12 years.
- DTaP inadvertently administered on or after age 7 years:
- Children age 7–9 years: DTaP may count as part of catch-up series. Administer routine Tdap dose at age 11–12 years.
- Children age 10–18 years: Count dose of DTaP as the adolescent Tdap booster.
- · 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 tetanustoxoid-containing vaccine is indicated for a pregnant adolescent, use Tdap.
- For detailed information, see 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 12–15 months, 4–6 years
- Dose 2 may be administered as early as 3 months after dose 1 (a dose administered after a 4-week interval may be counted).

Catch-up vaccination

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

2021 Adult Immunization Schedule

Recommended Adult Immunization Schedule for ages 19 years or older

2021

How to use the adult immunization schedule

Determine recommended vaccinations by age (Table 1)

Assess need for additional recommended vaccinations by medical condition and other indications (Table 2) Review vaccine types, frequencies, and intervals and considerations for special situations (Notes)

Vaccines in the Adult Immunization Schedule*

Vaccines	Abbreviations	Trade names
Haemophilus influenzae type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	НерА	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix*
Hepatitis B vaccine	НерВ	Engerix-B® Recombivax HB® Heplisav-B®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist® Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok® Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM MenACWY-TT	Menactra® Menveo® MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero® Trumenba®
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13*
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax 23*
Tetanus and diphtheria toxoids	Td	Tenivac* Tdvax™
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel® Boostrix®
Varicella vaccine	VAR	Varivax*
Zoster vaccine, recombinant	RZV	Shingrix

^{*}Administer recommended vaccines if vaccination history is incomplete or unknown. Do not restart or add doses to vaccine series if there are extended intervals between doses. The use of trade names is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Recommended by the Advisory Committee on Immunization Practices (www.cdc.gov/vaccines/acip) and approved by the Centers for Disease Control and Prevention (www.cdc.gov), American College of Physicians (www.acponline.org), American Academy of Family Physicians (www.aafp. org), American College of Obstetricians and Gynecologists (www.acog.org), American College of Nurse-Midwives (www.midwife.org), and American Academy of Physician Assistants (www.aapa.org).

Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to the local or state health department
- Clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or 800-822-7967

Injury claims

All vaccines included in the adult immunization schedule except pneumococcal 23-valent polysaccharide (PPSV23) and zoster (RZV) vaccines are covered by the Vaccine Injury Compensation Program. Information on how to file a vaccine injury claim is available at www.hrsa.gov/vaccinecompensation.

Questions or comments

Contact 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.

Helpful information

- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions):
- www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: 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
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2021: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html
- ACIP Shared Clinical Decision-Making Recommendations www.cdc.gov/vaccines/acip/acip-scdm-faqs.html



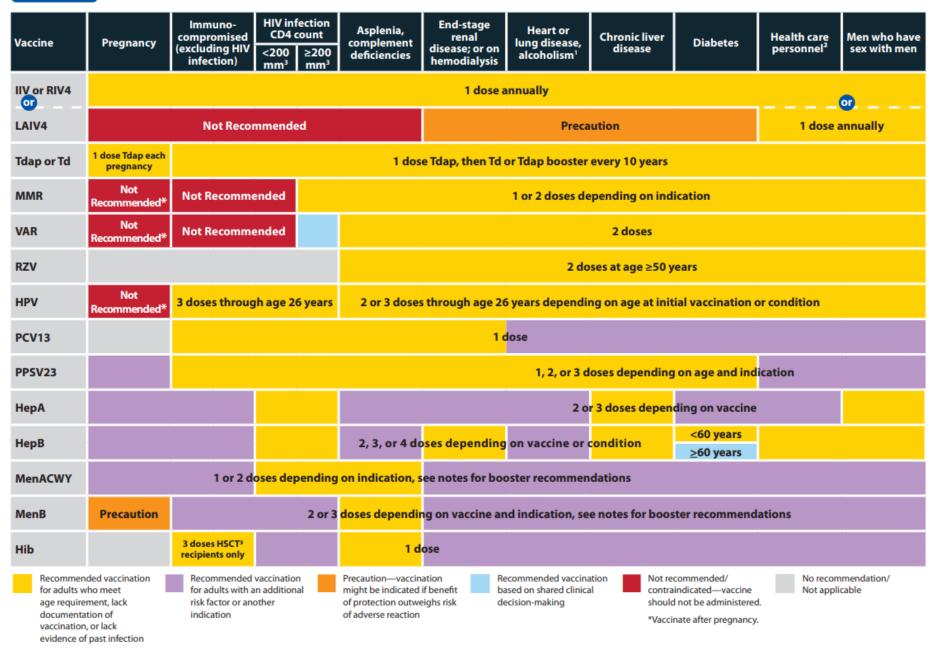
U.S. Department of Health and Human Services Centers for Disease Control and Prevention

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

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

Table 2

Recommended Adult Immunization Schedule by Medical Condition and Other Indications, United States, 2021



^{1.} Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.



Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2021

For vaccine recommendations for persons 18 years of age or younger, see the Recommended Child/ Adolescent Immunization Schedule.

Additional Information

COVID-19 Vaccination

ACIP recommends use of COVID-19 vaccines within the scope of the Emergency Use Authorization or Biologics License Application for the particular vaccine. Interim ACIP recommendations for the use of COVID-19 vaccines can be found at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/covid-19.html

Haemophilus influenzae type b vaccination

Special situations

- Anatomical or functional asplenia (including sickle cell disease): 1 dose if previously did not receive Hib; if 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

Not at risk but want protection from hepatitis A
 (identification of risk factor not required): 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

- At risk for hepatitis A virus infection: 2-dose series HepA or 3-dose series HepA-HepB as above
- 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 (administer dose 1 as soon as adoption is planned, at least 2 weeks before adoptee's arrival)
- Pregnancy if at risk for infection or severe outcome from infection during pregnancy
- Settings for exposure, including health care settings targeting services to injection or noninjection drug users or group homes and nonresidential day care facilities for developmentally disabled persons (individual risk factor screening not required)

Hepatitis B vaccination

Routine vaccination

• Not at risk but want protection from hepatitis B
(identification of risk factor not required): 2- or 3-dose
series (2-dose series Heplisav-B at least 4 weeks apart [2dose series HepB only applies when 2 doses of Heplisav-B
are used at least 4 weeks apart] or 3-dose series Engerix-B
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]) 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

- At risk for hepatitis B virus infection: 2-dose (Heplisav-B) or 3-dose (Engerix-B, Recombivax HB) series or 3-dose series HepA-HepB (Twinrix) as above
- 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 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; hemodialysis, peritoneal dialysis, home dialysis, and predialysis patients; persons with diabetes mellitus age younger than 60 years, shared clinical decision-making for persons age 60 years or older)
- Incarcerated persons
- Travel in countries with high or intermediate endemic hepatitis B
- **Pregnancy** if at risk for infection or severe outcome from infection during pregnancy (Heplisav-B not currently recommended due to lack of safety data in pregnant women)

Human papillomavirus vaccination

Routine vaccination

- HPV vaccination recommended for all persons through age 26 years: 2- or 3-dose series depending on age at initial vaccination or condition:
- 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)
- 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
- Interrupted schedules: If vaccination schedule is interrupted, the series does not need to be restarted
- No additional dose recommended after completing series with recommended dosing intervals using any HPV vaccine

Shared clinical decision-making

 Some adults age 27-45 years: Based on shared clinical decision-making, 2- or 3-dose series as above

Special situations

 Age ranges recommended above for routine and catchup vaccination or shared clinical decision-making also apply in special situations

Notes

Recommended Adult Immunization Schedule, United States, 2021

- Immunocompromising conditions, including HIV infection: 3-dose series as above, regardless of age at initial vaccination
- Pregnancy: HPV vaccination not recommended until after pregnancy; no intervention needed if vaccinated while pregnant; pregnancy testing not needed before vaccination

Influenza vaccination

Routine vaccination

- Persons age 6 months or older: 1 dose any influenza vaccine appropriate for age and health status annually
- For additional guidance, see <u>www.cdc.gov/flu/</u> <u>professionals/index.htm</u>

Special situations

- Egg allergy, hives only: 1 dose any influenza vaccine appropriate for age and health status annually
- Egg allergy-any symptom other than hives (e.g., angioedema, respiratory distress): 1 dose any influenza vaccine appropriate for age and health status annually.
 If using an influenza vaccine other than RIV4 or cclIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- Severe allergic reactions to any vaccine can occur even in the absence of a history of previous allergic reaction.
 Therefore, all vaccine providers should be familiar with the office emergency plan and certified in cardiopulmonary resuscitation.
- A previous severe allergic reaction to any influenza vaccine is a contraindication to future receipt of the vaccine.
- LAIV4 should not be used in persons with the following conditions or situations:
- History of severe allergic reaction to any vaccine component (excluding egg) or to a previous dose of any influenza vaccine
- Immunocompromised due to any cause (including medications and HIV infection)
- Anatomic or functional asplenia
- Close contacts or caregivers of severely immunosuppressed persons who require a protected environment
- Pregnancy
- Cranial CSF/oropharyngeal communications
- Cochlear implant

- 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
- Adults 50 years or older
- History of Guillain-Barré syndrome within 6 weeks after previous dose of influenza vaccine: Generally, should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

Measles, mumps, and rubella vaccination

Routine vaccination

- No evidence of immunity to measles, mumps, or rubella: 1 dose
- Evidence of immunity: Born before 1957 (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 women of childbearing age with no evidence of immunity to rubella: 1 dose
- HIV infection with CD4 count ≥200 cells/mm³ for at least 6 months and no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart; MMR contraindicated for HIV infection with 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: 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
- Health care personnel:
- Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella

Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for 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 series MenACWY-D (Menactra, Menveo or MenQuadfi) at least 8 weeks apart and revaccinate every 5 years if risk remains
- Travel in countries with hyperendemic or epidemic meningococcal disease, microbiologists routinely exposed to Neisseria meningitidis: 1 dose MenACWY (Menactra, Menveo or MenQuadfi) and revaccinate 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) and military recruits: 1 dose MenACWY (Menactra, Menveo or MenQuadfi)
- For MenACWY booster dose recommendations for groups listed under "Special situations" and in an outbreak setting (e.g., in community or organizational settings and 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, 2-dose series MenB-4C (Bexsero) at least 1 month apart or 2-dose series MenB-FHbp (Trumenba) at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

Special situations for MenB

 Anatomical or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use, microbiologists routinely exposed to Neisseria meningitidis: 2-dose primary series MenB-4C (Bexsero) at least one month apart or