

# The 2023 Adult Immunization Schedule and other CDC Resources

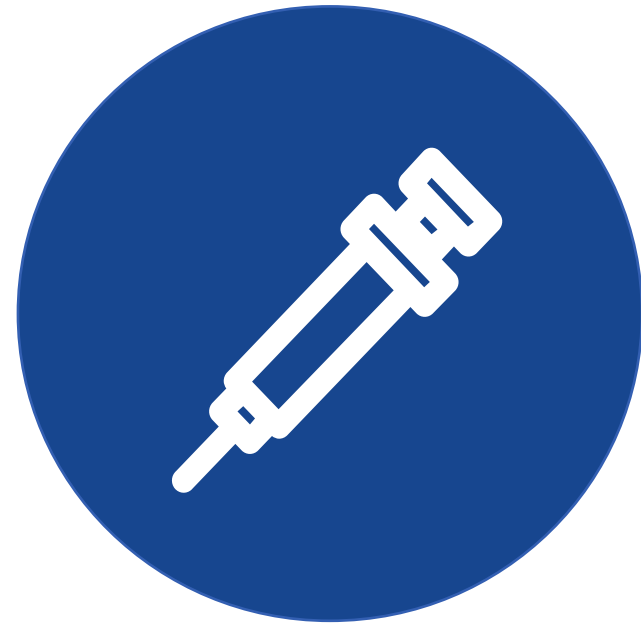
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**LCDR, United States Public Health Service**

**Immunization Services Division**

NAIIS Summit Call

March 9, 2023



# Immunization schedule: Overview

# Immunization Schedules: Overview

- Two separate schedules
  - Child and adolescent schedule (age birth through 18 years)
  - Adult schedule (age 19 years or older)
- Updated each year
  - Represents current, approved ACIP policy
  - Designed for implementation of ACIP policy
- Published in February
  - MMWR Notice to Readers – announcement of availability on ACIP website
  - Annals of Internal Medicine – published in entirety (adult schedule only)

Recommended Adult Immunization Schedule  
for ages 19 years or older
UNITED STATES  
2023

Recommended Child and Adolescent Immunization Schedule  
for ages 18 years or younger
UNITED STATES  
2023

**Vaccines in the Child and Adolescent Immunization Schedule\***

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19	1COV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine Spikevax™/Moderna COVID-19 Vaccine
	2COV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1COV-aPS	Novavax COVID-19 Vaccine
Dengue vaccine	DEN4CYD	Dengvaxia*
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel® Infanrix®
	DT	No trade name
Diphtheria, tetanus vaccine	Hib (PRP-T)	ActHib®
	Hib (PRP-OMP)	Hibertix® PedvaxHib®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis B vaccine	HepB	Engerix-B® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IV4	Multigrip
	LJLV4	FluMist® Quadrivalent
Influenza vaccine (live, attenuated)	MMR	M-M-R-II®
		Priorix®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra®
	MenACWY-CRM	Menveo®
	MenACWY-TT	MenQuadfi®
Meningococcal serogroup B vaccine	MenB-4C	Bexsero®
Pneumococcal conjugate vaccine	MenB-FHbp	Trumenb®
	PCV13	Prevnar 13®
Pneumococcal polysaccharide vaccine	PCV15	Vaxneuvance™
Poliiovirus vaccine (inactivated)	IPV23	Pneumovax 23®
Poliovirus vaccine (inactivated)	IPV	IPOL®
Rotavirus vaccine	RV1	Rotarix®
Tetanus, diphtheria, and acellular pertussis vaccine	RV5	RotaTeq®
	Tdap	Adacel® Boostrix®
Tetanus and diphtheria vaccine	Td	Tenivac® Tdapacel®
Varicella vaccine	VAR	Varivax®
<b>Combination vaccines (use combination vaccines instead of separate injections when appropriate)</b>		
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® Quadacel®
DTaP, inactivated poliovirus, Haemophilus influenzae type b, and hepatitis B vaccine	DTaP-IPV-Hib-HepB	Valets®
Measles, mumps, rubella, and varicella vaccine	MMRV	ProQuad®

**How to use the child and adolescent immunization schedule**

- 1** Determine recommended vaccine by age (Table 1)
- 2** Determine recommended interval for catch-up vaccination (Table 2)
- 3** Assess need for additional recommended vaccines by medical condition or other indication (Table 3)
- 4** Review vaccine types, frequencies, intervals, and considerations for special situations (Notes)
- 5** Review contraindications and precautions for vaccine types (Appendix)

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

**Report**

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

**Questions or comments**

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

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

**Helpful information**

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

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

[www.cdc.gov/vaccines/schedules/index.html](http://www.cdc.gov/vaccines/schedules/index.html)

# Approving Partners

Child/Adolescent Schedule	Both Schedules	Adult Schedule
<ul style="list-style-type: none"><li>• American Academy of Pediatrics (AAP)</li><li>• National Association of Pediatric Nurse Practitioners (NAPNAP)</li></ul>	<ul style="list-style-type: none"><li>• American Academy of Family Physicians (AAFP)</li><li>• American Academy of Physician Associates (AAPA)</li><li>• American College of Obstetricians and Gynecologists (ACOG)</li><li>• American College of Nurse-Midwives (ACNM)</li></ul>	<ul style="list-style-type: none"><li>• American College of Physicians (ACP)</li><li>• Society for Healthcare Epidemiology of America (SHEA)</li><li>• American Pharmacists Association (APhA)</li></ul>

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# 2023 Recommended Adult Immunization Schedule

# Major Updates: 2023 Adult Immunization Schedule



## Changes to Tables

- Cover Page
- Table 1
- Table 2

## Changes to Vaccination Notes

- COVID-19
- Hepatitis B
- Influenza
- Measles, Mumps and Rubella
- Meningococcal
- Pneumococcal
- Polio
- Tetanus, diphtheria, and pertussis
- Zoster

## Changes to Appendix

- Column Header
- Influenza
- Hepatitis B
- Human Papillomavirus

# Recommended Adult Immunization Schedule

## for ages 19 years or older

UNITED STATES  
**2023**

### How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (**Table 1**)
- 2** Assess need for additional recommended vaccinations by medical condition or other indication (**Table 2**)
- 3** Review vaccine types, frequencies, intervals, and considerations for special situations (**Notes**)
- 4** Review contraindications and precautions for vaccine types (**Appendix**)

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

### Vaccines in the Adult Immunization Schedule\*

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19 vaccine	1vCOV-mRNA	Comirnaty <sup>®</sup> /Pfizer-BioNTech COVID-19 Vaccine SPIKEVAX <sup>®</sup> /Moderna COVID-19 Vaccine
	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
<i>Haemophilus influenzae</i> type b vaccine	Hib	ActHIB <sup>®</sup> Hiberix <sup>®</sup> PedvaxHIB <sup>®</sup>
Hepatitis A vaccine	HepA	Havrix <sup>®</sup> Vaqta <sup>®</sup>
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix <sup>®</sup>
Hepatitis B vaccine	HepB	Engerix-B <sup>®</sup> Heplisav-B <sup>®</sup> PreHevbrio <sup>®</sup> Recombivax HB <sup>®</sup>
Human papillomavirus vaccine	HPV	Gardasil 9 <sup>®</sup>
Influenza vaccine (inactivated)	IIV4	Many brands
Influenza vaccine (live, attenuated)	LAIV4	FluMist <sup>®</sup> Quadrivalent
Influenza vaccine (recombinant)	RIV4	Flublok <sup>®</sup> Quadrivalent
Measles, mumps, and rubella vaccine	MMR	M-M-R II <sup>®</sup> Priorix <sup>®</sup>
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra <sup>®</sup>
	MenACWY-CRM	Menveo <sup>®</sup>
	MenACWY-TT	MenQuadfi <sup>®</sup>
Meningococcal serogroup B vaccine	MenB-4C	Bexsero <sup>®</sup>
	MenB-FHbp	Trumenba <sup>®</sup>
Pneumococcal conjugate vaccine	PCV15	Vaxneuvance <sup>™</sup>
	PCV20	Prenar 20 <sup>™</sup>
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23 <sup>®</sup>
Poliovirus vaccine	IPV	IPOL <sup>®</sup>
Tetanus and diphtheria toxoids	Td	Tenivac <sup>®</sup> Tdvax <sup>™</sup>
	Tdap	Adacel <sup>®</sup> Boostrix <sup>®</sup>
Tetanus and diphtheria toxoids and acellular pertussis vaccine	Tdap	Adacel <sup>®</sup> Boostrix <sup>®</sup>
Varicella vaccine	VAR	Varivax <sup>®</sup>
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.

### 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](http://www.vaers.hhs.gov) or 800-822-7967

### Injury claims

All vaccines included in the adult immunization schedule except PPSV23, RZV, and COVID-19 vaccines are covered by the Vaccine Injury Compensation Program. COVID-19 vaccines that are authorized or approved by the FDA are covered by the Countermeasures Injury Compensation Program. For more information, see [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation) or [www.hrsa.gov/cicp](http://www.hrsa.gov/cicp)

### Questions or comments

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



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

### Helpful information

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- Vaccine information statements: [www.cdc.gov/vaccines/hcp/vis/index.html](http://www.cdc.gov/vaccines/hcp/vis/index.html)
- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): [www.cdc.gov/vaccines/pubs/surv-manual](http://www.cdc.gov/vaccines/pubs/surv-manual)
- Travel vaccine recommendations: [www.cdc.gov/travel](http://www.cdc.gov/travel)
- Recommended Child and Adolescent Immunization Schedule, United States, 2023: [www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html](http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html)
- ACIP Shared Clinical Decision-Making Recommendations: [www.cdc.gov/vaccines/acip/acip-scdm-faqs.html](http://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html)

Scan QR code for access to online schedule



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

# Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES  
**2023**

## How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (**Table 1**)
- 2** Assess need for additional recommended vaccinations by medical condition or other indication (**Table 2**)
- 3** Review vaccine types, frequencies, intervals, and considerations for special situations (**Notes**)
- 4** Review contraindications and precautions for vaccine types (**Appendix**)

### Vaccines in the Adult Immunization Schedule\*

Vaccine	Abbreviation(s)	Trade name(s)
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<i>Haemophilus influenzae</i> type b vaccine	Hib	ActHIB <sup>®</sup> Hiberix <sup>®</sup> PedvaxHIB <sup>®</sup>
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- Travel vaccine recommendations: [www.cdc.gov/travel](http://www.cdc.gov/travel)
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U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

# Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES  
**2023**

## How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age ([Table 1](#))
- 2** Assess need for additional recommended vaccinations by medical condition or other indication ([Table 2](#))
- 3** Review vaccine types, frequencies, intervals, and considerations for special situations ([Notes](#))
- 4** Review contraindications and precautions for vaccine types ([Appendix](#))

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Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra <sup>®</sup>
	MenACWY-CRM	Menveo <sup>®</sup>
	MenACWY-TT	MenQuadfi <sup>®</sup>
Meningococcal serogroup B vaccine	MenB-4C	Bexsero <sup>®</sup>
	MenB-FHbp	Trumenba <sup>®</sup>
Pneumococcal conjugate vaccine	PCV15	Vaxneuvance <sup>™</sup>
	PCV20	Prenmar 20 <sup>™</sup>
	PPSV23	Pneumovax 23 <sup>®</sup>
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23 <sup>®</sup>
Poliovirus vaccine	IPV	IPOL <sup>®</sup>
Tetanus and diphtheria toxoids	Td	Tenivac <sup>®</sup> Tdvax <sup>™</sup>
	Tdap	Adacel <sup>®</sup> Boostrix <sup>®</sup>
	Tdap pertussis vaccine	Varivax <sup>®</sup>
Varicella vaccine	VAR	Shingrix
Zoster vaccine, recombinant	RZV	

\*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](http://www.cdc.gov/vaccines/acip)) and approved by the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)), American College of Physicians ([www.acponline.org](http://www.acponline.org)), American Academy of Family Physicians ([www.aafp.org](http://www.aafp.org)), American College of Obstetricians and Gynecologists ([www.acog.org](http://www.acog.org)), American College of Nurse-Midwives ([www.midwife.org](http://www.midwife.org)), American Academy of Physician Assistants ([www.aapa.org](http://www.aapa.org)), **American Pharmacists Association ([www.pharmacist.com](http://www.pharmacist.com))**, and Society for Healthcare Epidemiology of America ([www.shea-online.org](http://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](http://www.vaers.hhs.gov) or 800-822-7967

### Injury claims

All vaccines included in the adult immunization schedule except PPSV23, RZV, and COVID-19 vaccines are covered by the Vaccine Injury Compensation Program. COVID-19 vaccines that are authorized or approved by the FDA are covered by the Countermeasures Injury Compensation Program. For more information, see [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation) or [www.hrsa.gov/cicp](http://www.hrsa.gov/cicp).

### Questions or comments

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U.S. Department of  
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# Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES  
**2023**

## How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (**Table 1**)
- 2** Assess need for additional recommended vaccinations by medical condition or other indication (**Table 2**)
- 3** Review vaccine types, frequencies, intervals, and considerations for special situations (**Notes**)
- 4** Review contraindications and precautions for vaccine types (**Appendix**)

### Vaccines in the Adult Immunization Schedule\*

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19 vaccine	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine SPIKEVAX®/Moderna COVID-19 Vaccine
	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
<i>Haemophilus influenzae</i> type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Heplisav-B® PreHevbrio® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	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® Priorix®
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 conjugate vaccine	PCV15	Vaxneuvance™
	PCV20	Pneumovax 20™
	PPSV23	Pneumovax 23®
Poliovirus vaccine	IPV	IPOL®
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
	Tdap	Adacel® Boostrix®
Tetanus and diphtheria toxoids and acellular pertussis vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix

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### 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](http://www.vaers.hhs.gov) or 800-822-7967

### Injury claims

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COVID-19 vaccines that are authorized or approved by the FDA are covered by the Countermeasures Injury Compensation Program. For more information, see [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation) or [www.hrsa.gov/cicp](http://www.hrsa.gov/cicp)

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U.S. Department of  
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# Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES  
**2023**

## How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (Table 1)
- 2** Assess need for additional recommended vaccinations by medical condition or other indication (Table 2)
- 3** Review vaccine types, frequencies, intervals, and considerations for special situations (Notes)
- 4** Review contraindications and precautions for vaccine types (Appendix)

### Vaccines in the Adult Immunization Schedule\*

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19 vaccine	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine Spikevax®/Moderna COVID-19 Vaccine
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	1vCOV-aPS	Novavax COVID-19 Vaccine
<i>Haemophilus influenzae</i> type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Heplisav-B® PreHevbrio® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	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® Priorix®
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D	Menactra®
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Varicella vaccine	VAR	Varivax®
Zoster vaccine, recombinant	RZV	Shingrix

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### 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](http://www.vaers.hhs.gov) or 800-822-7967

### Injury claims

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# Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES  
**2023**

## How to use the adult immunization schedule

- 1 Determine recommended vaccinations by age (Table 1)
- 2 Assess need for additional recommended vaccinations by medical condition or other indication (Table 2)
- 3 Review vaccine types, frequencies, intervals, and considerations for special situations (Notes)
- 4 Review contraindications and precautions for vaccine types (Appendix)

### Vaccines in the Adult Immunization Schedule\*

Vaccine	Abbreviation(s)	Trade name(s)
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	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
<i>Haemophilus influenzae</i> type B vaccine	Hib	Acel-Hib® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
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# Recommended Adult Immunization Schedule

## for ages 19 years or older

UNITED STATES  
**2023**

### How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (Table 1)
- 2** Assess need for additional recommended vaccinations by medical condition or other indication (Table 2)
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- Manual for the Surveillance of Vaccine-Preventable Diseases (including case identification and outbreak response): [www.cdc.gov/vaccines/pubs/surv-manual](http://www.cdc.gov/vaccines/pubs/surv-manual)
- Travel vaccine recommendations: [www.cdc.gov/travel](http://www.cdc.gov/travel)
- Recommended Child and Adolescent Immunization Schedule, United States, 2023: [www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html](http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html)
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U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

# Recommended Adult Immunization Schedule for ages 19 years or older

UNITED STATES  
**2023**

## How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (Table 1)
- 2** Assess need for additional recommended vaccinations by medical condition or other indication (Table 2)
- 3** Review vaccine types, frequencies, intervals, and considerations for special situations (Notes)
- 4** Review contraindications and precautions for vaccine types (Appendix)

### Vaccines in the Adult Immunization Schedule\*

Vaccine	Abbreviation(s)	Trade name(s)
COVID-19 vaccine	1vCOV-mRNA	Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine Spikevax®/Moderna COVID-19 Vaccine
	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
Haemophilus influenzae type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Heplisav-B® PreHevbrio® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	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® Priorix®
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 conjugate vaccine	PCV15	Vaxneuvance™
	PCV20	Prevnar 20™
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23®
Poliovirus vaccine	IPV	IPOL®
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](http://www.cdc.gov/vaccines/acip)) and approved by the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)), American College of Physicians ([www.acponline.org](http://www.acponline.org)), American College of Family Physicians ([www.aafp.org](http://www.aafp.org)), American College of Obstetricians and Gynecologists ([www.acog.org](http://www.acog.org)), American College of Nurse-Midwives ([www.midwife.org](http://www.midwife.org)), American Academy of Physician Associates ([www.aapa.org](http://www.aapa.org)), American Pharmacists Association ([www.pharmacist.com](http://www.pharmacist.com)), and Society for Healthcare Epidemiology of America ([www.shea-online.org](http://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](http://www.vaers.hhs.gov) or 800-822-7967

### Injury claims

All vaccines included in the adult immunization schedule except PPSV23, RZV, and COVID-19 vaccines are covered by the Vaccine Injury Compensation Program. COVID-19 vaccines that are authorized or approved by the FDA are covered by the Countermeasures Injury Compensation Program. For more information, see [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation) or [www.hrsa.gov/cicp](http://www.hrsa.gov/cicp).

### Questions or comments

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



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

### Helpful information

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

# Recommended Adult Immunization Schedule

## for ages 19 years or older

UNITED STATES  
**2023**

### How to use the adult immunization schedule

- 1** Determine recommended vaccinations by age (Table 1)
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#### Vaccines in the Adult Immunization Schedule\*

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	2vCOV-mRNA	Pfizer-BioNTech COVID-19 Vaccine, Bivalent Moderna COVID-19 Vaccine, Bivalent
	1vCOV-aPS	Novavax COVID-19 Vaccine
<i>Haemophilus influenzae</i> type b vaccine	Hib	ActHIB® Hiberix® PedvaxHIB®
Hepatitis A vaccine	HepA	Havrix® Vaqta®
Hepatitis A and hepatitis B vaccine	HepA-HepB	Twinrix®
Hepatitis B vaccine	HepB	Engerix-B® Heplisav-B® PreHevbrio® Recombivax HB®
Human papillomavirus vaccine	HPV	Gardasil 9®
Influenza vaccine (inactivated)	IIV4	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® Priorix®
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 conjugate vaccine	PCV15	Vaxneuvance™
	PCV20	Prevnar 20™
Pneumococcal polysaccharide vaccine	PPSV23	Pneumovax 23®
Poliovirus vaccine	IPV	IPOL®
Tetanus and diphtheria toxoids	Td	Tenivac® Tdvax™
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Tetanus and diphtheria toxoids and acellular pertussis vaccine	VAR	Varivax®
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Recommended by the Advisory Committee on Immunization Practices ([www.cdc.gov/vaccines/acip](http://www.cdc.gov/vaccines/acip)) and approved by the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)), American College of Physicians ([www.acponline.org](http://www.acponline.org)), American College of Family Physicians ([www.aafp.org](http://www.aafp.org)), American College of Obstetricians and Gynecologists ([www.acog.org](http://www.acog.org)), American College of Nurse-Midwives ([www.midwife.org](http://www.midwife.org)), American Academy of Physician Associates ([www.aapa.org](http://www.aapa.org)), American Pharmacists Association ([www.pharmacist.com](http://www.pharmacist.com)), and Society for Healthcare Epidemiology of America ([www.shea-online.org](http://www.shea-online.org)).

#### Report

- Suspected cases of reportable vaccine-preventable diseases or outbreaks to the local or state health department
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#### Questions or comments

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



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#### Helpful information

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

# Table 1

*Recommended Adult Immunization Schedule by Age*

**Table 1** Recommended Adult Immunization Schedule by Age Group, United States, 2023

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID-19	2- or 3- dose primary series and booster (See Notes)			
Influenza inactivated (IIV4) or Influenza recombinant (RIV4)	1 dose annually			
or 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)			For healthcare personnel, see notes
Varicella (VAR)	2 doses (if born in 1980 or later)	2 doses		
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)			See Notes
				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	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			

  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
   No recommendation/ Not applicable

**Table 1** Recommended Adult Immunization Schedule by Age Group, United States, 2023

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
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Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

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No recommendation/ Not applicable

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Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)			See Notes
				See Notes
<b>Hepatitis A (HepA)</b>	<b>2, 3, or 4 doses depending on vaccine</b>			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
<i>Haemophilus influenzae</i> type b (Hib)	1 or 3 doses depending on indication			

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
No recommendation/ Not applicable

## Table 2

*Recommended Adult Immunization Schedule by  
Medical Indication*

**Table 2** Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2023

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 percentage and count		Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism <sup>a</sup>	Chronic liver disease	Diabetes	Health care personnel <sup>b</sup>	Men who have sex with men
			<15% or <200 mm <sup>3</sup>	≥15% and ≥200 mm <sup>3</sup>							
COVID-19		See Notes									
IIV4 or RIV4 or LAIV4	1 dose annually										
	Contraindicated					Precaution			or 1 dose annually		
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Contraindicated*	Contraindicated	1 or 2 doses depending on indication								
VAR	Contraindicated*	Contraindicated		2 doses							
RZV		2 doses at age ≥19 years			2 doses at age ≥50 years						
HPV	Not Recommended*	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 followed by PPSV23 OR 1 dose PCV20 (see notes)									
HepA				2 or 3 doses depending on vaccine							
HepB	3 doses (see notes)	2, 3, or 4 doses depending on vaccine or condition									
MenACWY	1 or 2 doses depending on indication, see notes for booster recommendations										
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT <sup>c</sup> recipients only		1 dose							

  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
   Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction
   Contraindicated or not recommended—vaccine should not be administered.
   No recommendation/Not applicable

\*Vaccinate after pregnancy.

a. Precaution for LAIV4 does not apply to alcoholism. b. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. c. Hematopoietic stem cell transplant.

**Table 2** Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2023

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 percentage and count		Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism <sup>a</sup>	Chronic liver disease	Diabetes	Health care personnel <sup>b</sup>	Men who have sex with men
			<15% or <200 mm <sup>3</sup>	≥15% and ≥200 mm <sup>3</sup>							
COVID-19		See Notes									
IIV4 or RIV4 OR LAIV4		1 dose annually				Contraindicated		Precaution		OR 1 dose annually	
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Contraindicated <sup>c</sup>	Contraindicated		1 or 2 doses depending on indication							
VAR	Contraindicated <sup>c</sup>	Contraindicated		2 doses							
RZV		2 doses at age ≥19 years				2 doses at age ≥50 years					
HPV	Not Recommended <sup>c</sup>	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 followed by PPSV23 OR 1 dose PCV20 (see notes)									
HepA				2 or 3 doses depending on vaccine							
HepB	3 doses (see notes)	2, 3, or 4 doses depending on vaccine or condition									
MenACWY		1 or 2 doses depending on indication, see notes for booster recommendations									
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT <sup>c</sup> recipients only			1 dose						

  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.
   Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction.
   Contraindicated or not recommended—vaccine should not be administered.
   No recommendation/Not applicable.

a. Precaution for LAIV4 does not apply to alcoholism. b. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. c. Hematopoietic stem cell transplant.

**Table 2** Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2023

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 percentage and count		Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism <sup>a</sup>	Chronic liver disease	Diabetes	Health care personnel <sup>b</sup>	Men who have sex with men
			<15% or <200 mm <sup>3</sup>	≥15% and ≥200 mm <sup>3</sup>							
COVID-19			See Notes								
IIV4 or RIV4 OR LAIV4						1 dose annually					1 dose annually
Tdap or Td	1 dose Tdap each pregnancy					1 dose Tdap, then Td or Tdap booster every 10 years					
MMR	Contraindicated <sup>c</sup>	Contraindicated				1 or 2 doses depending on indication					
VAR	Contraindicated <sup>c</sup>	Contraindicated				2 doses					
RZV			2 doses at age ≥19 years			2 doses at age ≥50 years					
HPV	Not Recommended <sup>c</sup>		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 followed by PPSV23 OR 1 dose PCV20 (see notes)					
HepA						2 or 3 doses depending on vaccine					
HepB	3 doses (see notes)					2, 3, or 4 doses depending on vaccine or condition					
MenACWY			1 or 2 doses depending on indication, see notes for booster recommendations								
MenB	Precaution		2 or 3 doses depending on vaccine and indication, see notes for booster recommendations								
Hib		3 doses HSCT <sup>c</sup> recipients only				1 dose					

  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.
   Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction.
   Contraindicated or not recommended—vaccine should not be administered.
   No recommendation/Not applicable.

a. Precaution for LAIV4 does not apply to alcoholism. b. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. c. Hematopoietic stem cell transplant.

**Notes**

**Notes****Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023**

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

**COVID-19 vaccination****Routine vaccination**

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

**Special situations**

Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

**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**

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

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

## Notes

## Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

## COVID-19 vaccination

## Routine vaccination

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

## Special situations

Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines).

## 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

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

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

## Notes

## Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

### COVID-19 vaccination

#### Routine vaccination

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

#### Special situations

##### Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

**For Janssen COVID-19 Vaccine recipients** see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

### 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

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

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

## Notes

## Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

### COVID-19 vaccination

#### Routine vaccination

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

#### Special situations

##### Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

**For Janssen COVID-19 Vaccine recipients** see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

### Haemophilus influenzae type b vaccination

#### Special situations

- **Anatomical or functional asplenia** (including sickle cell disease, splenectomy, or asplenia)
- **Hepatitis B virus infection** (see Hepatitis B vaccination history)

### Routine vaccination

- **Added description of the primary series**

### 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)

- **Contact with international adoptees** (individuals who were born or raised in a country with high or intermediate endemic hepatitis A [administer dose if exposure 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

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

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

**Notes**

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

**COVID-19 vaccination**

**Routine vaccination**

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

**Special situations**

**Persons who are moderately or severely immunocompromised**

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

**For Janssen COVID-19 Vaccine recipients see** COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

**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 transplantation:** 3-dose series at 0, 1, 6 months
- **Hib vaccination:** see [Hib vaccination](#)

**Routine va**

- **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**

**Routine vaccination**

- **Hyperlink to see latest booster dose recommendations**

- **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 adoptees (e.g., household or regular babysitting) in a country with high or intermediate endemic hepatitis A (administer dose 1 at 0, 1, 6 months, followed by a booster dose at 12 months, at least 2 weeks before departure)**

- **Persons with a history of injection or noninjection drug use, 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**

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

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

**Notes**

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

**COVID-19 vaccination**

**Routine vaccination**

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

**Special situations**

**Persons who are moderately or severely immunocompromised**

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

**For Janssen COVID-19 Vaccine recipients see** COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

**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 status

**Special situations**

- Primary series description for persons who are moderately or severely immunocompromised

**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 arrival)

- **Persons at high risk for infection or severe outcome during pregnancy**

- **Persons with exposure, including health care settings** (e.g., exposure to injection or noninjection drug use, homeless and nonresidential day care, developmentally disabled persons, and other factors; factor screening not required)

**Hepatitis B vaccination**

**Routine vaccination**

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

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

Notes

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

COVID-19 vaccination

Routine vaccination

- Primary series: 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
• Booster dose: see www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html

Special situations

Persons who are moderately or severely immunocompromised

- Primary series
- 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
- 2-dose series at 0, 3 weeks (Novavax)
• Booster dose: see www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html
• Pre-exposure prophylaxis (e.g., monoclonal antibodies) may be considered to complement COVID-19 vaccination.

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html.

Note: Current COVID-19 schedule available at www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf. For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines

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 6-12 months apart)
• At risk for hepatitis A infection: 1, 6 months

Special situations

- Hyperlink to see latest booster dose recommendations

Special situations

- At risk for hepatitis A infection: 1, 6 months
- 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 (screening not required)

Hepatitis B vaccination

years: complete a 2- or 3- or

applies when 2 doses of Hepisav-B are used at least 4 weeks apart

- 3-dose series Engerix-B, PreHevbrio\*, or Recombivax HB at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks]

- 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

- 4-dose series HepA-HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21-30 days, followed by a booster dose at 12 months

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

Notes

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

COVID-19 vaccination

Routine vaccination

- Primary series: 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
• Booster dose: see www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html

Special situations

Persons who are moderately or severely immunocompromised

- Primary series
- 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
- 2-dose series at 0, 3 weeks (Novavax)
• Booster dose: see www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html
• Pre-exposure prophylaxis (e.g., monoclonal antibodies) may be considered to complement COVID-19 vaccination.

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html.

Note: Current COVID-19 schedule available at www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf. For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines

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

- Pre-exposure prophylaxis considerations for persons who are moderately or severely immunocompromised
- Chronic liver disease (including alcohol-related liver disease)
- 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

... complete a 2- or 3- or ... when 2 doses of ... at least 4 weeks apart ... PreHevbrio\*, or Recombivax ... minimum intervals: dose 1 to ... to dose 3: 8 weeks / dose 1 ... to dose 3: 16 weeks]

- 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

- 4-dose series HepA-HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21-30 days, followed by a booster dose at 12 months

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

Notes

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

COVID-19 vaccination

Routine vaccination

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

Special situations

Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

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
  - Chronic liver hepatitis

Special situations

- For Janssen COVID-19 Vaccine recipients, see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

- **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

- **Age 19 through 59 years:** complete a 2- or 3- or 4-dose series

schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months

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

Notes

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

COVID-19 vaccination

Routine vaccination

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

Special situations

Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis (e.g., monoclonal antibodies)** may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines)

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] levels above normal, or twice the upper limit of normal)
  - **HIV infection**

Special situations

- Additional resources on COVID-19 schedules and EUA indications

- **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

- **Age 19 through 59 years:** complete a 2- or 3- or 4-dose series
  - 2-dose series only applies when 2 doses of Heplisav-B\* are used at least 4 weeks apart
  - 3-dose series Engerix-B, PreHevbrio\*, or Recombivax HB at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1

to dose 3: 8 weeks / dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

Heplisav-B\* (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months

PreHevbrio\* and Recombivax HB are not recommended for persons with HIV infection due to lack of safety data

in pregnant persons.

## Notes

## Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

## COVID-19 vaccination

## Routine vaccination

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

## Special situations

Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis** (e.g., monoclonal antibodies) may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines).

## 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

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

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

**Notes**

Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

**COVID-19 vaccination**

**Routine vaccination**

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

**Special situations**

Persons who are moderately or severely immunocompromised

• **Primary series**

- 3-dose series at 0, 1, 2 months
- 3-dose series at 0, 1, 6 months
- 2-dose series at 0, 6 months

• **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

• **Pre-exposure prophylaxis (antibodies)** may be used for COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines).

**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**

**Routine vaccination**

- Revised the descriptions of the 2-, 3-, and 4-dose series.

- **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**

- **Age 19 through 59 years: complete a 2- or 3- or 4-dose series**

- 2-dose series only applies when 2 doses of Heplisav-B\* are used at least 4 weeks apart

- 3-dose series Engerix-B, PreHevbrio\*, or Recombivax HB at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 8 weeks / dose 1 to dose 3: 16 weeks]

- 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

- 4-dose series HepA-HepB (Twinrix) accelerated schedule of 3 doses at 0, 7, and 21–30 days, followed by a booster dose at 12 months

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

## Notes

## Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023

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

## COVID-19 vaccination

## Routine vaccination

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

## Special situations

Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis** (e.g., monoclonal antibodies) may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf](http://www.cdc.gov/vaccines/covid-19/downloads/COVID-19-immunization-schedule-ages-6months-older.pdf). For more information on Emergency Use Authorization (EUA) indications for COVID-19 vaccines, please visit [www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines](http://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines).

## 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

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

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

**Notes****Recommended Adult Immunization Schedule for ages 19 years or older, United States, 2023**

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

**COVID-19 vaccination****Routine vaccination**

- **Primary series:** 2-dose series at 0, 4-8 weeks (Moderna) or 2-dose series at 0, 3-8 weeks (Novavax, Pfizer-BioNTech)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)

**Special situations**

Persons who are moderately or severely immunocompromised

- **Primary series**
  - 3-dose series at 0, 4, 8 weeks (Moderna) or 3-dose series at 0, 3, 7 weeks (Pfizer-BioNTech)
  - 2-dose series at 0, 3 weeks (Novavax)
- **Booster dose:** see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html)
- **Pre-exposure prophylaxis** (e.g., monoclonal antibodies) may be considered to complement COVID-19 vaccination. See [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#immunocompromised)

For Janssen COVID-19 Vaccine recipients see COVID-19 schedule at [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html).

**Note:** Current COVID-19 schedule available at [www.cdc.gov/vaccines](http://www.cdc.gov/vaccines)

[www.cdc.gov/vaccines-immunization-s](http://www.cdc.gov/vaccines-immunization-s)  
For more information (EUA) indication [www.fda.gov/ema/coronavirus-dis](http://www.fda.gov/ema/coronavirus-dis)

**Routine vaccination**

- Note describes that Heplisav-B and PreHevbrio are not recommended in pregnancy

**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**

- **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**

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

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

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

#### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

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

### Influenza vaccination

#### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

#### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

- **Age 60 years or older with** known risk factors for hepatitis B virus infection **should** complete a HepB vaccine series.
- **Age 60 years or older without** known risk factors for hepatitis B virus infection **may** complete a HepB vaccine series.

**- Risk factors for hepatitis B virus infection include:**

- **Chronic liver disease** (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice upper limit of normal)
- **HIV infection**
- **Sexual exposure risk** (e.g., sex partners of hepatitis B surface antigen [HBsAg]-positive persons; sexually active persons not in mutually monogamous relationships; persons seeking evaluation or treatment for a sexually transmitted infection; men who have sex with men)
- **Current or recent injection drug use**
- **Percutaneous or mucosal risk for exposure to blood** (e.g., household contacts of HBsAg-positive persons; residents and staff of facilities for developmentally disabled persons; health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids; persons on maintenance dialysis, including in-center or home hemodialysis and peritoneal dialysis, and persons who are predialysis; patients with diabetes)
- **Incarceration**
- **Travel in countries with high or intermediate endemic hepatitis B**

**Special situations**

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

## Routine vaccination

- Added two bullets for persons who are 60 years of age and older

### Routine

• HPV vaccination through age

- Age 11-12

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 catch-up vaccination or shared clinical decision-making also apply in special situations

- **Immunocompromising conditions, including HIV infection:** 3-dose series, even for those who initiate vaccination at age 9 through 14 years.

- **Pregnancy:** Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

### Routine vaccination

• **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.

• **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

• **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.

• For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)

• For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.

• **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.

• **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

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

#### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

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

#### Influenza vaccination

##### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

##### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts** (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment: these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction** (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions

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

#### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

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

#### Influenza vaccination

##### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

##### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts** (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment: these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction** (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions

- **Age 60 years or older with known risk factors** for hepatitis B virus infection **should** complete a HepB vaccine series.
- **Age 60 years or older without known risk factors** for hepatitis B virus infection **may** complete a HepB vaccine series.

**- Risk factors for hepatitis B virus infection include:**

- **Chronic liver disease** (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice upper limit of normal)
- **HIV infection**
- **Sexual exposure risk** (e.g., sex partners of hepatitis B surface antigen [HBsAg]-positive persons; sexually active persons not in mutually monogamous relationships; persons seeking evaluation or treatment for a sexually transmitted infection; men who have sex with men)
- **Current or recent injection drug use**
- **Percutaneous or mucosal risk for exposure to blood** (e.g., household contacts of HBsAg-positive persons; residents and staff of facilities for developmentally disabled persons; health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids; persons on maintenance dialysis, including in-center or home hemodialysis and peritoneal dialysis, and persons who are predialysis; patients with diabetes)
- **Incarceration**
- **Travel in countries with high or intermediate endemic hepatitis B**

**Special situations**

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

**Human papillomavirus vaccination**

**Routine vaccination**

- HPV vaccination recommended for all persons through age 26, or on age at least 27 through 45 years

3-dose series  
intervals:  
12 weeks  
administered

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

**Influenza vaccination**

**Routine vaccination**

- **Age 19 years or older:** 1 dose any influenza vaccine annually.

trivalent  
inactivated  
influenza vaccine (HD-IIV4),  
inactivated influenza vaccine (RIV4),  
and influenza vaccine (live-attenuated, age-appropriate)

influenza vaccine should be used.

- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

**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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts** (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment: these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction** (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine: see Appendix listing contraindications and precautions

**Routine vaccination**

- Risk factors for Hepatitis B infection are listed

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

#### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

#### 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 catch-up vaccination or shared clinical decision-making
- **Pregnant:** HPV vaccination is safe and effective during pregnancy 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.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

##### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts** (e.g., caregivers, healthcare workers) of severely immunosuppressed persons

### Special situations

- Describes regimen for patients on hemodialysis

- **Age 60 years or older** with known risk factors for hepatitis B virus infection **should** complete a HepB vaccine series.
- **Age 60 years or older** without known risk factors for hepatitis B virus infection **may** complete a HepB vaccine series.

- **Risk factors for hepatitis B virus infection include:**

**Chronic liver disease** (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice upper limit of normal)

**HIV infection**

**Sexual exposure risk** (e.g., sex partners of hepatitis B surface antigen [HBsAg]-positive persons; sexually active persons not in mutually monogamous relationships; persons seeking evaluation or treatment for a sexually transmitted infection; men who have sex with men)

**Current or recent injection drug use**

**Percutaneous or mucosal risk for exposure to blood** (e.g., household contacts of HBsAg-positive persons; residents and staff of facilities for developmentally disabled persons; health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids; persons on maintenance dialysis, including in-center or home hemodialysis and peritoneal dialysis, and persons who are predialysis; patients with diabetes)

**Incarceration**

**Travel in countries with high or intermediate endemic hepatitis B**

**Special situations**

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

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

**Influenza vaccination**

**Routine vaccination**

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

**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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

- Age 60 years or older with known risk factors for hepatitis B virus infection should complete a HepB vaccine series.

- Age 60 years or older with known risk factors for hepatitis B virus infection should complete a HepB vaccine series.

- Risk factors for hepatitis B virus infection include:

- **Chronic liver disease:** Chronic hepatitis B, chronic hepatitis C, cirrhosis, 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; persons on maintenance dialysis, including in-center or home hemodialysis and peritoneal dialysis, and persons who are predialysis; patients with diabetes)
- **Incarceration**
- **Travel in countries with high or intermediate endemic hepatitis B**

#### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

### Human papillomavirus vaccination

#### Routine vaccination

#### Routine vaccination

- Sub-bullet added for persons 65 years of age or older

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

### Influenza vaccination

#### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

#### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

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

#### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

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

### Influenza vaccination

#### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

#### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions



- **Age 60 years or older** with known risk factors for hepatitis B virus infection **should** complete a HepB vaccine series.
- **Age 60 years or older** without known risk factors for hepatitis B virus infection **may** complete a HepB vaccine series.

- **Risk factors for hepatitis B virus infection include:**

**Chronic liver disease** (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice 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

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Travel in countries with high or intermediate endemic hepatitis B

## Special situations

- Included influenza vaccine recommendations for people with an egg allergy who experienced any symptom other than hives the bullet for egg-allergy

### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

## 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

catch-up vaccination or shared clinical decision-making also apply in special situations

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

## Influenza vaccination

### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

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

#### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

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

### Influenza vaccination

#### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

#### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

- **Age 60 years or older** with known risk factors for hepatitis B virus infection **should** complete a HepB vaccine series.
- **Age 60 years or older** without known risk factors for hepatitis B virus infection **may** complete a HepB vaccine series.

- **Risk factors for hepatitis B virus infection include:**

**Chronic liver disease** (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice 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; peritoneal dialysis patients with dialysis membrane exposure; incarceration; travel in countries with endemic hepatitis B virus infection)

## Special situations

- Added a bullet about close contacts to those who are severely immunosuppressed AND required a protected environment.

### Special situations

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

## 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, HPV vaccination is recommended for persons aged 27–45 years who have not been vaccinated as above
  - **Age 27–45 years:** HPV vaccination at age 9 through 14 years.
  - **Pregnancy:** Pregnancy testing is not needed before vaccination; HPV vaccination is not recommended until after pregnancy; no intervention needed if inadvertently vaccinated while pregnant

## Influenza vaccination

### Routine vaccination

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

### 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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **Severe allergic reaction (e.g., anaphylaxis) to a vaccine component or a previous dose of any influenza vaccine:** see Appendix listing contraindications and precautions

- **Age 60 years or older** with known risk factors for hepatitis B virus infection **should** complete a HepB vaccine series.
- **Age 60 years or older** without known risk factors for hepatitis B virus infection **may** complete a HepB vaccine series.

- **Risk factors for hepatitis B virus infection include:**

**Chronic liver disease** (e.g., persons with hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice upper limit of normal)

**HIV infection**

**Sexual exposure risk** (e.g., sex partners of hepatitis B surface antigen [HBsAg]-positive persons; sexually active persons not in mutually monogamous relationships; persons seeking evaluation or treatment for a sexually transmitted infection; men who have sex with men)

**Current or recent injection drug use**

**Percutaneous or mucosal risk for exposure to blood** (e.g., household contacts of HBsAg-positive persons; residents and staff of facilities for developmentally disabled persons; health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids; persons on maintenance dialysis, including in-center or home hemodialysis and peritoneal dialysis, and persons who are predialysis; patients with diabetes)

**Incarceration**

**Travel in countries with high or intermediate endemic hepatitis B**

**Special situations**

- **Patients on dialysis:** complete a 3- or 4-dose series
  - 3-dose series Recombivax HB at 0, 1, 6 months (note: use Dialysis Formulation 1 mL = 40 mcg)
  - 4-dose series Engerix-B at 0, 1, 2, and 6 months (note: use 2 mL dose instead of the normal adult dose of 1 mL)

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

**Influenza vaccination**

**Routine vaccination**

- **Age 19 years or older:** 1 dose any influenza vaccine appropriate for age and health status annually.
  - **Age 65 years or older:** Any one of quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4) is preferred. If none of these three vaccines is available, then any other age-appropriate influenza vaccine should be used.
- For the 2022–2023 season, see [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)
- For the 2023–2024 season, see the 2023–2024 ACIP influenza vaccine recommendations.

**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): Any influenza vaccine appropriate for age and health status may be administered. If using egg-based IIV4 or LAIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions.
- **Close contacts (e.g., caregivers, healthcare workers) of severely immunosuppressed persons who require a protected environment:** these persons should not receive LAIV4. If LAIV4 is given, they should avoid contact with/caring for such immunosuppressed persons for 7 days after vaccination.
- **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 persons of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **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

- **In mumps outbreak settings,** for information about additional doses of MMR (including 3rd dose of MMR), see [www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm](http://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm)
- **Health care personnel:**
  - **Born before 1957 with no evidence of immunity to measles, mumps, or rubella:** Consider 2-dose series at least 4 weeks apart for protection against measles or mumps or 1 dose for protection against rubella
  - **Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella:** 2-dose series at least 4 weeks apart for protection against measles or mumps or at least 1 dose for protection against rubella

### Meningococcal vaccination

#### Special situations for MenACWY

- **Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:** 2-dose 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](http://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 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; if dose 3 is administered earlier than 4 months after dose 2, a fourth dose should be administered at least 4 months after dose 3); 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](http://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.

- 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 persons of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **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

- **In mumps outbreak settings,** for information about additional doses of MMR (including 3rd dose of MMR), see [www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm](http://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm)

#### Health care personnel:

- **Born before 1957 with no evidence of immunity to measles, mumps, or rubella:** Consider 2-dose series at least 4 weeks apart for protection against measles or mumps or 1 dose for protection against rubella
- **Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella:** 2-dose series at least 4 weeks apart for protection against measles or mumps or at least 1 dose for protection against rubella

### Meningococcal vaccination

#### Special situations for MenACWY

- **Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:** 2-dose 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](http://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 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; if dose 3 is administered earlier than 4 months after dose 2, a fourth dose should be administered at least 4 months after dose 3); 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](http://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.

- 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 persons of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **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

- **In mumps outbreak settings,** for information about additional doses of MMR (including 3rd dose of MMR), see [www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm](http://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm)

#### Health care personnel:

- **Born before 1957 with no evidence of immunity to measles, mumps, or rubella:** Consider 2-dose series at least 4 weeks apart for protection against measles or mumps or 1 dose for protection against rubella
- **Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella:** 2-dose series at least 4 weeks apart for protection against measles or mumps or at least 1 dose for protection against rubella

### Meningococcal vaccination

#### Special situations for MenACWY

- **Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:** 2-dose 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](http://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm)

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## Special situations

- Added additional dose guidance in mumps outbreak settings

#### 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 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; if dose 3 is administered earlier than 4 months after dose 2, a fourth dose should be administered at least 4 months after dose 3); 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](http://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.

- 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 persons of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **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

- **In mumps outbreak settings,** for information about additional doses of MMR (including 3rd dose of MMR), see [www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm](http://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm)

#### Health care personnel:

##### - Born before 1957 with no evidence of immunity to measles, mumps, or rubella:

Consider 2-dose series at least 4 weeks apart for protection against measles or mumps or 1 dose for protection against rubella

##### - Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella:

2-dose series at least 4 weeks apart for protection against measles or mumps or at least 1 dose for protection against rubella

### Meningococcal vaccination

#### Special situations for MenACWY

- Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use: 2-dose 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](http://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 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; if dose 3 is administered earlier than 4 months after dose 2, a fourth dose should be administered at least 4 months after dose 3); 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](http://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.

- **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 persons of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **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

- **In mumps outbreak settings, for information about additional doses of MMR (including 3rd dose of MMR),** see [www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm](http://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm)

#### Health care personnel:

- **Born before 1957 with no evidence of immunity to measles, mumps, or rubella:** Consider 2-dose series at least 4 weeks apart for protection against measles or mumps or 1 dose for protection against rubella
- **Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella:** 2-dose series at least 4 weeks apart for protection against measles or mumps or at least 1 dose for protection against rubella

### Meningococcal vaccination

#### Special situations for MenACWY

- **Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:** 2-dose 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](http://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 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; if dose 3 is administered earlier than 4 months after dose 2, a fourth dose should be administered at least 4 months after dose 3); 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](http://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.

- **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 persons of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **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

- **In mumps outbreak settings, for information about additional doses of MMR (including 3rd dose of MMR),** see [www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm](http://www.cdc.gov/mmwr/volumes/67/wr/mm6701a7.htm)

#### Health care personnel:

- **Born before 1957 with no evidence of immunity to measles, mumps, or rubella:** Consider 2-dose series at least 4 weeks apart for protection against measles or mumps or 1 dose for protection against rubella
- **Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella:** 2-dose series at least 4 weeks apart for protection against measles or mumps or at least 1 dose for protection against rubella

### Meningococcal vaccination

#### Special situations for MenACWY

- **Anatomical or functional asplenia (including sickle cell disease), HIV infection, persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use:** 2-dose 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](http://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 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; if dose 3 is administered earlier than 4 months after dose 2, a fourth dose should be administered at least 4 months after dose 3); 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](http://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.

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

**\*Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

- **Adults at increased risk of exposure to poliovirus with:**
  - No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
  - Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

## Routine vaccination

## • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

## Special situations

## • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

**\*Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

## Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

## Special situations

## • Adults at increased risk of exposure to poliovirus with:

- No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

## Routine vaccination

## • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

## Special situations

## • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

**\*Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

## Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

## Special situations

- Adults at increased risk of exposure to poliovirus with:
  - No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
  - Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

**\*Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

- Adults at increased risk of exposure to poliovirus with:
  - No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
  - Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.

- **Previously received only PCV7:** follow the recommendation above.

- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.

- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

• For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak

- **Previously received only PCV7:** follow the recommendation above.

- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.

- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

• For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

• Adults at increased risk of exposure to poliovirus with:

- No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak

- **Previously received only PCV7:** follow the recommendation above.

- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.

- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

- For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

**\*Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

- Adults at increased risk of exposure to poliovirus with:

- No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

• For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

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## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

- Adults at increased risk of exposure to poliovirus with:
  - No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
  - Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

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## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

\* For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

\* For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

\***Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

#### • Adults at increased risk of exposure to poliovirus with:

- No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

\* For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

\* For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

\***Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

#### • Adults at increased risk of exposure to poliovirus with:

- No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

\* For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

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\***Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

#### • **Adults at increased risk of exposure to poliovirus with:**

- **No evidence of a complete polio vaccination series (i.e., at least 3 doses):** administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- **Evidence of completed polio vaccination series (i.e., at least 3 doses):** may administer one lifetime IPV booster

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

\* For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

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\***Note:** Immunocompromising conditions include chronic renal failure, nephrotic syndrome, immunodeficiency, iatrogenic immunosuppression, generalized malignancy, human immunodeficiency virus, Hodgkin disease, leukemia, lymphoma, multiple myeloma, solid organ transplants, congenital or acquired asplenia, sickle cell disease, or other hemoglobinopathies.

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

#### • Adults at increased risk of exposure to poliovirus with:

- **No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series**
- **Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster**

For detailed information, see: [www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html](http://www.cdc.gov/vaccines/vpd/polio/hcp/recommendations.html)

## Pneumococcal vaccination

### Routine vaccination

#### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

\* For guidance on determining which pneumococcal vaccines a patient needs and when, please refer to the mobile app which can be downloaded here: [www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html](http://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html)

### Special situations

#### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

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

## Polio vaccination

### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

### Special situations

#### • Adults at increased risk of exposure to poliovirus with:

- No evidence of a complete polio vaccination series (i.e., at least 3 doses): administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- Evidence of completed polio vaccination series (i.e., at least 3 doses): may administer one lifetime IPV booster

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### Pneumococcal vaccination

#### Routine vaccination

##### • Age 65 years or older who have:

- **Not previously received a dose of PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak to minimize the risk of invasive pneumococcal disease caused by serotypes unique to PPSV23 in these vulnerable groups.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but NO PPSV23 was received at age 65 years or older:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received both PCV13 and PPSV23, AND PPSV23 was received at age 65 years or older:** Based on shared clinical decision-making, 1 dose of PCV20 at least 5 years after the last pneumococcal vaccine dose.

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#### Special situations

##### • Age 19–64 years with certain underlying medical conditions or other risk factors\*\* who have

- **Not previously received a PCV13, PCV15, or PCV20 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 given at least 1 year after the PCV15 dose. A minimum interval of 8 weeks between PCV15 and PPSV23 can be considered for adults with an immunocompromising condition,\* cochlear implant, or cerebrospinal fluid leak.
- **Previously received only PCV7:** follow the recommendation above.
- **Previously received only PCV13:** 1 dose PCV20 at least 1 year after the PCV13 dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).
- **Previously received only PPSV23:** 1 dose PCV15 OR 1 dose PCV20 at least 1 year after the PPSV23 dose. If PCV15 is used, it need not be followed by another dose of PPSV23.
- **Previously received both PCV13 and PPSV23 but have not completed the recommended series:** 1 dose PCV20 at least 5 years after their last pneumococcal vaccine dose OR complete the recommended PPSV23 series as described here [www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf](http://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf).

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

### Polio vaccination

#### Routine vaccination

Routine poliovirus vaccination of adults residing in the United States is not necessary.

#### Special situations

##### • Adults at increased risk of exposure to poliovirus with:

- **No evidence of a complete polio vaccination series (i.e., at least 3 doses):** administer remaining doses (1, 2, or 3 doses) to complete a 3-dose series
- **Evidence of completed polio vaccination series (i.e., at least 3 doses):** may administer one lifetime IPV booster

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**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
  - **Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*:** 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- \*\***Note:** If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- **Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*:** 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- **\*\*Note:** If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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

**Special situations**

- **Minor edits to improve clarity of the language.**

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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

for varicella is contraindicated. However, if susceptibility becomes low ACIP guidelines for varicella vaccination first. RZV is not indicated for the prevention of varicella, and there are limited data on the use of RZV in persons without a history of varicella or varicella vaccination.

**Special situations**

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- **Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*:** 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- **Note:** If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- **Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*:** 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- **\*\*Note:** If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
  - **Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*:** 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- \*\*Note:** If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

## 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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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

## Routine vaccination

- Note added to provide some background on serologic evidence of prior varicella

- Pregnancy with no evidence of immunity to varicella: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose if previously received 1 dose varicella-containing vaccine or dose 1 of 2-dose series (dose 2: 4–8 weeks later) if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- Health care personnel with no evidence of immunity to varicella: 1 dose if previously received 1 dose varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- Severe immunocompromising conditions: VAR contraindicated

## Zoster vaccination

## Routine vaccination

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

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

## Special situations

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*: 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- \*\*Note: If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
- **Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*:** 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- **\*\*Note:** If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**Special situations**

- Pregnancy with no evidence of immunity to varicella: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility)
- U.S.-born before 1980
- HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- Severe immunocompromising conditions: VAR contraindicated

**Special situations**

- Added language to clarify the immunocompromising bullet

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
  - Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*: 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- \*\*Note: If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged  $\geq 19$  years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- **Pregnancy:** There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.

• **Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*:** 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)

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

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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

**Special situations**

- Note added to provide some background on history prior varicella infection, varicella vaccination, or prior herpes zoster

VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

- Pregnancy: There is currently no ACIP recommendation for RZV use in pregnancy. Consider delaying RZV until after pregnancy.
  - Immunocompromising conditions (including persons with HIV regardless of CD4 count)\*\*: 2-dose series recombinant zoster vaccine (RZV, Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon). For detailed information, see [www.cdc.gov/shingles/vaccination/immunocompromised-adults.html](http://www.cdc.gov/shingles/vaccination/immunocompromised-adults.html)
- \*\*Note: If there is no documented history of varicella, varicella vaccination, or herpes zoster, providers should refer to the clinical considerations for use of RZV in immunocompromised adults aged ≥19 years and the ACIP varicella vaccine recommendations for further guidance: [www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm](http://www.cdc.gov/mmwr/volumes/71/wr/mm7103a2.htm)

**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 later, and a third dose of Td or Tdap 6–12 months later (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](http://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 persons and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**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 varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- **HIV infection with CD4 percentages  $\geq 15\%$  and CD4 count  $\geq 200$  cells/mm<sup>3</sup> 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/mm<sup>3</sup>
- **Severe immunocompromising conditions:** VAR contraindicated

**Zoster vaccination****Routine vaccination**

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

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

**Special situations**

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

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

# Appendix

## 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](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html) and ACIP's Recommendations for the Prevention and Control of 2022-23 Seasonal Influenza with Vaccines available at [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)

## For COVID-19 vaccine contraindications and precautions see

[www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#contraindications](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#contraindications)

Vaccine	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
Influenza, egg-based, inactivated injectable (IIV4)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, cell culture-based inactivated injectable [(cclIV4), Flucelvax <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) to any cclIV of any valency, or to any component<sup>3</sup> of cclIV4</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using cclIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, recombinant injectable [(RIV4), Flublok <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component<sup>3</sup> of RIV4</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, cclIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, live attenuated [LAIV4, Flumist <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> <li>Anatomic or functional asplenia</li> <li>Immunocompromised due to any cause including, but not limited to, medications and HIV infection</li> <li>Close contacts or caregivers of severely immunosuppressed persons who require a protected environment</li> <li>Pregnancy</li> <li>Cochlear implant</li> <li>Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear, or any other cranial CSF leak</li> <li>Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days.</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Asthma in persons aged 5 years old or older</li> <li>Persons with underlying medical conditions (other than those listed under contraindications) that might predispose to complications after wild-type influenza virus infection [e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)]</li> <li>Moderate or severe acute illness with or without fever</li> </ul>

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](http://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](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html)

3. Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. Package inserts for U.S.-licensed vaccines are available at [www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states](http://www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states).

## 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](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html) and ACIP's Recommendations for the Prevention and Control of 2022-23 Seasonal Influenza with Vaccines available at [www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm](http://www.cdc.gov/mmwr/volumes/71/rr/rr7101a1.htm)

For COVID-19 vaccine contraindications and precautions see [www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#contraindications](http://www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#contraindications)

Vaccine	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
Influenza, egg-based, inactivated injectable (IIV4)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, cell culture-based inactivated injectable [(cclIV4), Flucelvax® Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) to any component<sup>3</sup> of cclIV of any valency, or to any component<sup>3</sup> of cclIV</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using cclIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, recombinant injectable [(RIV4), Flublok® Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component<sup>3</sup> of RIV4</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, cclIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Influenza, live attenuated [LAIV4, Flumist® Quadrivalent]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> <li>Immunocompromised due to any cause including, but not limited to, medications and HIV infection</li> <li>Close contacts or caregivers of severely immunosuppressed persons who require a protected environment</li> <li>Pregnancy</li> <li>Cochlear implant</li> <li>Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear, or any other cranial CSF leak</li> <li>Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days.</li> </ul>	<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>Asthma in persons aged 5 years old or older</li> <li>Persons with underlying medical conditions (other than those listed under contraindications) that might predispose to complications after wild-type influenza virus infection [e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)]</li> <li>Moderate or severe acute illness with or without fever</li> </ul>

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](http://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](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html)

3. Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. Package inserts for U.S.-licensed vaccines are available at [www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states](http://www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states).

Vaccine	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
Influenza, egg-based, inactivated injectable (IIV4)	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, cell culture-based inactivated injectable [(cclIV4), Flucelvax <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) to any cclIV of any valency, or to any component<sup>3</sup> of cclIV4</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using cclIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, recombinant injectable [(RIV4), Flublok <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component<sup>3</sup> of RIV4</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, cclIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, live attenuated [LAIV4, Flumist <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> <li>• Anatomic or functional asplenia</li> <li>• Immunocompromised due to any cause including, but not limited to, medications and HIV infection</li> <li>• Close contacts or caregivers of severely immunosuppressed persons who require a protected environment</li> <li>• Pregnancy</li> <li>• Cochlear implant</li> <li>• Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear, or any other cranial CSF leak</li> <li>• Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days.</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Asthma in persons aged 5 years old or older</li> <li>• Persons with underlying medical conditions (other than those listed under contraindications) that might predispose to complications after wild-type influenza virus infection [e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)]</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>

Vaccine	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
Influenza, egg-based, inactivated injectable (IIV4)	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, cell culture-based inactivated injectable [cclIV4, Flucelvax <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) to any cclIV of any valency, or to any component<sup>1</sup> of cclIV4</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using cclIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, recombinant injectable [(RIV4), Flublok <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component<sup>1</sup> of RIV4</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, cclIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, live attenuated [LAIV4, Flumist <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> <li>• Anatomic or functional asplenia</li> <li>• Immunocompromised due to any cause including, but not limited to, medications and HIV infection</li> <li>• Close contacts or caregivers of severely immunosuppressed persons who require a protected environment</li> <li>• Pregnancy</li> <li>• Cochlear implant</li> <li>• Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear, or any other cranial CSF leak</li> <li>• Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days.</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Asthma in persons aged 5 years old or older</li> <li>• Persons with underlying medical conditions (other than those listed under contraindications) that might predispose to complications after wild-type influenza virus infection [e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)]</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>

Vaccine	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
Influenza, egg-based, inactivated injectable (IIV4)	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, cell culture-based inactivated injectable [cclIV4, Flucelvax <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) to any cclIV of any valency, or to any component<sup>1</sup> of cclIV4</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using cclIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, recombinant injectable [RIV4, Flublok <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component<sup>1</sup> of RIV4</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, cclIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, live attenuated [LAIV4, Flumist <sup>®</sup> Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cclIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>2</sup> (excluding egg)</li> <li>• Anatomic or functional asplenia</li> <li>• Immunocompromised due to any cause including, but not limited to, medications and HIV infection</li> <li>• Close contacts or caregivers of severely immunosuppressed persons who require a protected environment</li> <li>• Pregnancy</li> <li>• Cochlear implant</li> <li>• Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear, or any other cranial CSF leak</li> <li>• Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days.</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Asthma in persons aged 5 years old or older</li> <li>• Persons with underlying medical conditions (other than those listed under contraindications) that might predispose to complications after wild-type influenza virus infection [e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)]</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>

Vaccine	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
Influenza, egg-based, inactivated injectable (IIV4)	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cdlIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, cell culture-derived, inactivated injectable [(cd)IIV4, Flucelevax Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cdlIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• 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 cdlV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, recombinant injectable [(R)IV4, Flublok Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component<sup>4</sup> of RIV4</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, cdlIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>
Influenza, live attenuated [(LA)IV4, Flumist Quadrivalent]	<ul style="list-style-type: none"> <li>• Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, cdlIV, RIV, or LAIV of any valency)</li> <li>• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component<sup>3</sup> (excluding egg)</li> <li>• Anatomic or functional asplenia</li> <li>• Immunocompromised due to any cause including, but not limited to, medications and HIV infection</li> <li>• Close contacts or caregivers of severely immunosuppressed persons who require a protected environment</li> <li>• Pregnancy</li> <li>• Cochlear implant</li> <li>• Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear, or any other cranial CSF leak</li> <li>• Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days</li> </ul>	<ul style="list-style-type: none"> <li>• Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine</li> <li>• Asthma in persons aged 5 years old or older</li> <li>• Persons with underlying medical conditions (other than those listed under contraindications) that might predispose to complications after wild-type influenza virus infection [e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)]</li> <li>• Moderate or severe acute illness with or without fever</li> </ul>

## Precautions

- Removed having an “egg allergy” from the precautions column

# Appendix

## Recommended Adult Immunization Schedule, United States, 2023

Vaccine	Contraindicated or Modified Indications <sup>1</sup>	Recommended <sup>2</sup>	Precautions <sup>3</sup>
<i>Haemophilus influenzae</i> type b (Hib)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>For Hiberix, ActHib, and PedvaxHIB only: History of severe allergic reaction to dry natural latex</li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis A (HepA)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including neomycin</li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis B (HepB)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including yeast</li> <li>Pregnancy: HepB, Heplisav-B and PreHevbrio are not recommended due to lack of safety data in pregnant persons. Use other hepatitis B vaccines if HepB is indicated</li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis A- Hepatitis B vaccine [HepA-HepB, (Twinrix <sup>®</sup> )]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including neomycin and yeast</li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Human papillomavirus (HPV)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Pregnancy: HPV vaccination not recommended</li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Measles, mumps, rubella (MMR)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised)</li> <li>Pregnancy</li> <li>Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent</li> </ul>		<ul style="list-style-type: none"> <li>Recent (<math>\leq 11</math> months) receipt of antibody-containing blood product (specific interval depends on product)</li> <li>History of thrombocytopenia or thrombocytopenic purpura</li> <li>Need for tuberculin skin testing or interferon-gamma release assay (IGRA) testing</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Meningococcal ACWY (MenACWY) [MenACWY-CRM (Menveo <sup>®</sup> ); MenACWY-D (Menactra <sup>®</sup> ); MenACWY-TT (MenQuadri <sup>®</sup> )]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>For MenACWY-D and Men ACWY-CRM only: severe allergic reaction to any diphtheria toxoid- or CRM197-containing vaccine</li> <li>For MenACWY-TT only: severe allergic reaction to a tetanus toxoid-containing vaccine</li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Meningococcal B (MenB) [MenB-4C (Bexsero <sup>®</sup> ); Trumenba <sup>®</sup> ]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>		<ul style="list-style-type: none"> <li>Pregnancy</li> <li>For MenB-4C only: Latex sensitivity</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Pneumococcal conjugate (PCV15, PCV20)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Severe allergic reaction (e.g., anaphylaxis) to any diphtheria-toxoid-containing vaccine or to its vaccine component<sup>3</sup></li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Pneumococcal polysaccharide (PPSV23)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Tetanus, diphtheria, and acellular pertussis (Tdap) Tetanus, diphtheria (Td)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>For Tdap only: Encephalopathy (e.g., coma, decreased level of consciousness, prolonged seizures), not attributable to another identifiable cause, within 7 days of administration of previous dose of DTP, DTaP, or Tdap</li> </ul>		<ul style="list-style-type: none"> <li>Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus-toxoid-containing vaccine</li> <li>History of Arthus-type hypersensitivity reactions after a previous dose of diphtheria-toxoid-containing or tetanus-toxoid-containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-toxoid-containing vaccine</li> <li>Moderate or severe acute illness with or without fever</li> <li>For Tdap only: Progressive or unstable neurological disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized</li> </ul>
Varicella (VAR)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>Severe immunodeficiency (e.g., hematologic and solid tumors, receipt of chemotherapy, congenital immunodeficiency, long-term immunosuppressive therapy or patients with HIV infection who are severely immunocompromised)</li> <li>Pregnancy</li> <li>Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent</li> </ul>		<ul style="list-style-type: none"> <li>Recent (<math>\leq 11</math> months) receipt of antibody-containing blood product (specific interval depends on product)</li> <li>Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)</li> <li>Use of aspirin or aspirin-containing products</li> <li>Moderate or severe acute illness with or without fever</li> </ul>
Zoster recombinant vaccine (RZV)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> </ul>		<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> <li>Current herpes zoster infection</li> </ul>

- When a contraindication is present, a vaccine should NOT be administered. Kroger A, Bahta L, Hunter P. ACIP General Best Practice Guidelines for Immunization. [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html](http://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](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html)
- Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. Package inserts for U.S.-licensed vaccines are available at [www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states](http://www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states).
- For information on the pregnancy exposure registries for persons who were inadvertently vaccinated with Heplisav-B or PreHevbrio while pregnant, please visit [heplisavbpregnancyregistry.com/](http://heplisavbpregnancyregistry.com/) or [www.prehevbrio.com/#safety](http://www.prehevbrio.com/#safety).

Vaccine	Contraindicated or Not Recommended <sup>1</sup>	Precautions <sup>2</sup>
<i>Haemophilus influenzae</i> type b (Hib)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup></li> <li>For Hiberix, ActHib, and PedvaxHIB only: History of severe allergic reaction to dry natural latex</li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis A (HepA)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including neomycin</li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis B (HepB)	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including yeast</li> <li><i>Pregnancy: Heplisav-B and PreHevbrio are not recommended due to lack of safety data in pregnant persons. Use other hepatitis B vaccines if HepB is indicated</i></li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
Hepatitis A- Hepatitis B vaccine [HepA-HepB, (Twinrix®)]	<ul style="list-style-type: none"> <li>Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component<sup>3</sup> including neomycin and yeast</li> </ul>	<ul style="list-style-type: none"> <li>Moderate or severe acute illness with or without fever</li> </ul>
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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](http://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](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html)
3. Vaccination providers should check FDA-approved prescribing information for the most complete and updated information, including contraindications, warnings, and precautions. Package Inserts for U.S.-licensed vaccines are available at [www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states](http://www.fda.gov/vaccines-blood-biologics/approved-products/vaccines-licensed-use-united-states).
4. For information on the pregnancy exposure registries for persons who were inadvertently vaccinated with HepIsav-B or PreHevbrio while pregnant, please visit [heplisavbpregnancyregistry.com/](http://heplisavbpregnancyregistry.com/) or [www.prehevbrio.com/#safety](http://www.prehevbrio.com/#safety).

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# Vaccination resources for healthcare providers

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# Immunization Schedules

CDC > Schedules Home > For Healthcare Providers

## Adult Immunization Schedule by Age

[Print](#)

Recommendations for Ages 19 Years or Older, United States, 2023

### Using the schedule


To make vaccination recommendations, healthcare providers should:

- 1. Determine needed vaccines **based on age** ([Table 1](#))
- 2. Assess for **medical conditions and other indications** ([Table 2](#))
- 3. Review **special situations** ([Vaccination Notes](#))
- 4. Review **contraindications and precautions to vaccination** ([Appendix](#))

### Vaccines You May Need

[Recommended vaccines for adults](#)

[Get personalized recommendations](#)

 [Get email updates](#)

### The Immunization Schedule

<a href="#">Table 1. By age</a>	<a href="#">Table 2. By indications</a>
<a href="#">Vaccination notes</a>	<a href="#">Appendix</a>

### Download the Schedule

- [Printable schedule, color !\[\]\(247e419044a625ce0d2802c15bf9c5a8\_img.jpg\)](#)
- [Printable schedule, black & white !\[\]\(971bcfc1338f84bea6956285ee1763e5\_img.jpg\)](#)
- [Download the mobile schedule app](#)

### More Schedule Resources

- [Compliant version of the schedule](#)
- [Schedule changes and guidance](#)
- [Vaccines in the schedule](#)
- [Syndicate the schedules on your website](#)

Download "CDC Vaccine Schedules" free for iOS and Android devices.



## Product Specs

Version: 10.0.1

**Requirements:** Requires iOS 11.0 or later and Android 5.1 or later; optimized for tablets and useful on smartphones.

**Updates:** Changes in the app are released through app updates.

Download app free for **iOS**



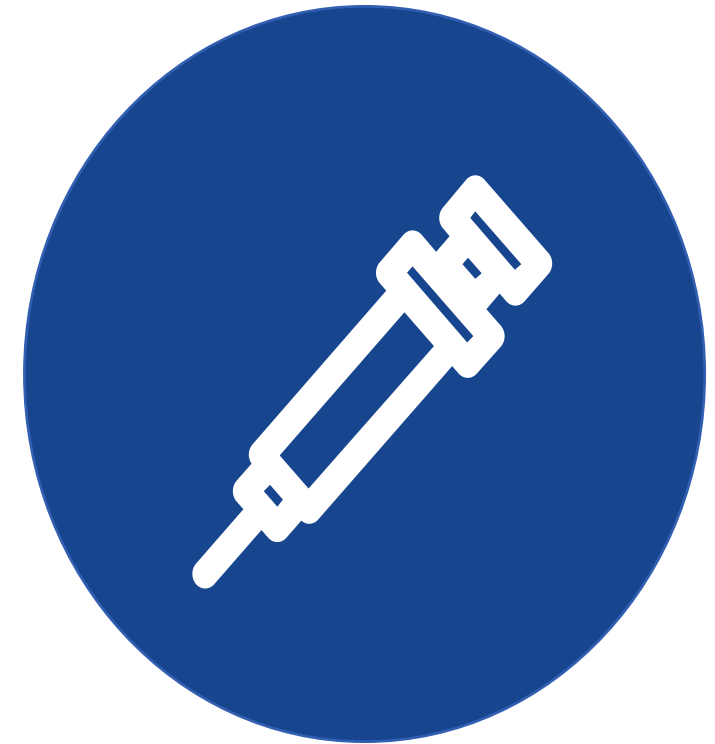
Download app free for **Android**





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## Vaccines and Preventable Diseases

[Vaccines & Preventable Diseases Home](#) > [Vaccines by Disease](#) > [Pneumococcal](#) > [For Healthcare Professionals](#)



🏠 Vaccines & Preventable Diseases  
Home

### Vaccines by Disease

Chickenpox (Varicella)	+
Dengue	+
Diphtheria	+
Flu (Influenza)	+
Hepatitis A	+
Hepatitis B	+
Hib	+
Human Papillomavirus (HPV)	+
Measles	+
Meningococcal	+
Mumps	+
Pneumococcal	—

[What Everyone Should Know](#)

[For Healthcare Professionals](#)

# PneumoRecs VaxAdvisor Mobile App for Vaccine Providers

**i** The PneumoRecs VaxAdvisor Mobile App was updated on February 9, 2022, to reflect CDC's new adult pneumococcal vaccination recommendations.

The *PneumoRecs VaxAdvisor* mobile app helps vaccination providers quickly and easily determine which pneumococcal vaccines a patient needs and when. The app incorporates recommendations for all ages so internists, family physicians, pediatricians, and pharmacists alike will find the tool beneficial.

Users simply:

- Enter a patient's age.
- Note if the patient has specific underlying medical conditions.
- Answer questions about the patient's pneumococcal vaccination history.

Then the app provides patient-specific guidance consistent with the immunization schedule recommended by the U.S. Advisory Committee on Immunization Practices (ACIP).

## Download the App Today

Download *PneumoRecs VaxAdvisor* for free:

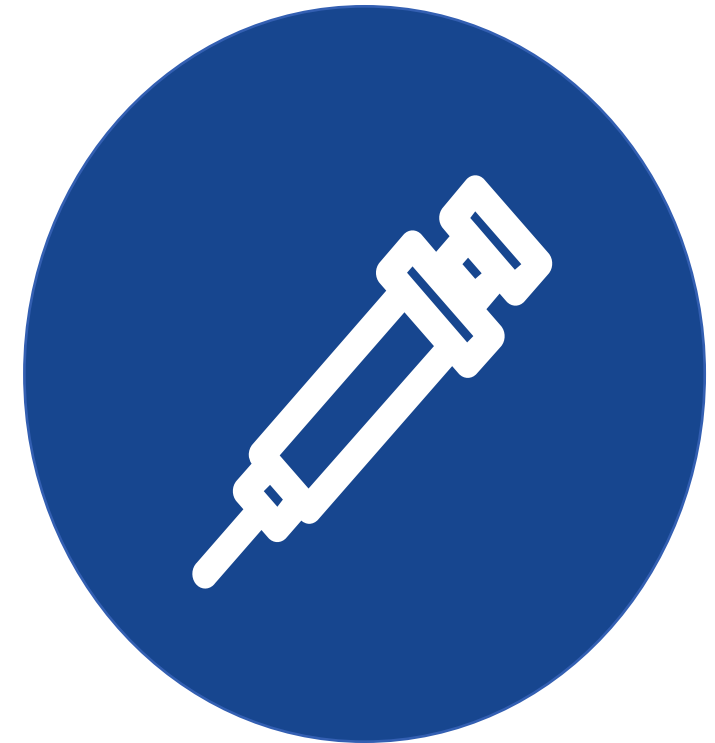
- [iOS devices](#)



PneumoRecs VaxAdvisor is available for download on iOS and Android mobile devices.

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# Pneumococcal Vaccine Timing for Adults

Make sure your patients are up to date with pneumococcal vaccination.

## Adults $\geq 65$ years old

### Complete pneumococcal vaccine schedules

Prior vaccines	Option A	Option B
None*	PCV20	PCV15 $\xrightarrow{\geq 1 \text{ year}^\dagger}$ PPSV23
PPSV23 only at any age	$\xrightarrow{\geq 1 \text{ year}}$ PCV20	$\xrightarrow{\geq 1 \text{ year}}$ PCV15
PCV13 only at any age	$\xrightarrow{\geq 1 \text{ year}}$ PCV20	$\xrightarrow{\geq 1 \text{ year}^\dagger}$ PPSV23
PCV13 at any age & PPSV23 at <65 yrs	$\xrightarrow{\geq 5 \text{ years}}$ PCV20	$\xrightarrow{\geq 5 \text{ years}^\S}$ PPSV23

\* Also applies to people who received PCV7 at any age and no other pneumococcal vaccines

<sup>†</sup> Consider minimum interval (8 weeks) for adults with an immunocompromising condition, cochlear implant, or cerebrospinal fluid leak (CSF) leak

<sup>§</sup> For adults with an immunocompromising condition, cochlear implant, or CSF leak, the minimum interval for PPSV23 is  $\geq 8$  weeks since last PCV13 dose and  $\geq 5$  years since last PPSV23 dose; for others, the minimum interval for PPSV23 is  $\geq 1$  year since last PCV13 dose and  $\geq 5$  years since last PPSV23 dose

### Shared clinical decision-making for those who already completed the series with PCV13 and PPSV23

Prior vaccines	Shared clinical decision-making option
Complete series: PCV13 at any age & PPSV23 at $\geq 65$ yrs	$\xrightarrow{\geq 5 \text{ years}}$ PCV20 Together, with the patient, vaccine providers <b>may choose</b> to administer PCV20 to adults $\geq 65$ years old who have already received PCV13 (but not PCV15 or PCV20) at any age and PPSV23 at or after the age of 65 years old.

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## Immunization Schedules

[Schedules Home](#)



[Schedules Home](#)

[For Health Care Providers](#) +

[For Parents & Adults](#) +

### Related Links

[Vaccines & Immunizations](#)

[ACIP Vaccination  
Recommendations](#)

[ACIP: Acronyms for Vaccines](#)

[Vaccine Guidelines and  
Recommendations for  
Emergency Situations](#)

[Delays in Vaccine Supply](#)

## The Adult Vaccine Assessment Tool

[Español \(Spanish\)](#)



Adults need vaccines too! Answer a few quick questions to find out which vaccines you may need.

Vaccines are recommended for adults based on age, health conditions, job, and other factors. No personal information will be retained by CDC. \* This vaccine assessment tool applies to adults 19 years or older.

### COVID-19 Vaccination

- Everyone 5 years and older is now eligible to [get a free COVID-19 vaccination](#).
- COVID-19 vaccines are [safe and effective](#).
- To find COVID-19 vaccine locations near you, search [vaccines.gov](#), text your zip code to 438829, or call 1-800-232-0233.
- Healthcare providers can find ACIP recommendations for the use of COVID-19 vaccines on the [ACIP Vaccine Recommendations and Guidelines](#) page.

## Instructions:

1. Answer the questions below.
2. Get a list of vaccines you may need based on your answers.  
(This list may include vaccines you've already had).
3. Discuss the list with your doctor or health care professional.

## Questions:

1. Are you
  - Male
  - Female
2. What year were you born? (some vaccines are age-related)
3. Have you ever had the chickenpox vaccine?  
OR  
Has a healthcare provider diagnosed you with chickenpox ever in your life, or do you have laboratory results showing that you had chickenpox sometime in your life?
  - Yes
  - No
  - Not Sure
4. Will you be traveling outside the U.S. in the near future?
  - Yes
  - No
5. Are you a first-year college student who lives in a college dormitory or a new military recruit?
  - Yes
  - No

## Instructions:

1. Answer the questions below.
2. Get a list of vaccines you may need based on your answers.  
(This list may include vaccines you've already had).
3. Discuss the list with your doctor or health care professional.

## Questions:

1. Are you

Male

Female

2. What year were you born? (some vaccines are age-related)

2004 ▾

3. Have you ever had the chickenpox vaccine?

OR

Has a healthcare provider diagnosed you with chickenpox ever in your life, or do you have laboratory results showing that you had chickenpox sometime in your life?

Yes

No

Not Sure

4. Will you be traveling outside the U.S. in the near future?

Yes

No

5. Are you a first-year college student who lives in a college dormitory or a new military recruit?


Yes

No

# Immunization Schedules

Schedules Home



 Schedules Home

For Health Care Providers +

For Parents & Adults +

## Related Links

[Vaccines & Immunizations](#)

[Vaccines You Need as an Adult](#)

[Vaccine Information Statements](#)

[ACIP Vaccination Recommendations](#)

[Why Immunize?](#)

[Vaccines: The Basics](#)

## Your Vaccine Assessment Results

Your answers to the Adult Vaccine Assessment suggest that you may need the following vaccines if you have not had them before or are not already immune.

### Suggested Vaccines

- [MMR](#)
- [Hepatitis B](#)
- [Influenza](#)
- [Meningococcal](#)
- [Tdap, Td](#)
- [HPV](#)

The table below provides more information on each of the vaccines you may need. Click on the vaccine name for more details. The links at the bottom of the page will allow you to print these results and take them to your next medical appointments.

Vaccine	Suggested because...
<a href="#">MMR</a> - Measles-mumps-rubella	Your age indicates that you might need the MMR vaccine.
<a href="#">Hepatitis B</a>	Your age indicates that you might need hepatitis B vaccine.
<a href="#">Seasonal Flu (Influenza)</a>	People 6 months of age or older should get the flu vaccine.
<a href="#">Meningococcal</a>	Your age indicates that you might need meningococcal vaccine.
<a href="#">Tdap, Td</a> - Tetanus, Diphtheria, and Pertussis	You might need 1 dose of tetanus, diphtheria, and pertussis vaccine (Tdap). Tdap may be given regardless of when you last received a tetanus and diphtheria vaccine (Td). After you receive your Tdap, you will need a Td booster every 10 years.

[HPV](#) - Human  
Papillomavirus

Your age indicates that you might need HPV vaccine.

#### Next Steps...

Share this information with your doctor or other health care professional, along with your vaccination record. If you do not have a [vaccination record](#), now is a good time to start one.

Tell your doctor if you have already had any of these vaccines or diseases. To make sure you get the vaccines you need, your doctor will also need to know your allergies and history of disease.

[Print healthcare  
provider form](#)



[Print all  
vaccines  
information](#)



[Take Adult Vaccine Assessment again](#) | [More vaccination information](#)

#### More Information

Call CDC-INFO, in English or Spanish: 1-800-CDC-INFO or 1-800-232-4636

#### Related Pages

[Adults Need Vaccines Too](#)

[Adult Immunization Schedule](#)

[Adolescent and Adult Vaccine Quiz web buttons](#)

Page last reviewed: February 18, 2022

Content source: National Center for Immunization and Respiratory Diseases

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## Healthcare Providers / Professionals

[Healthcare Professionals / Providers Home](#) > [Administration Tools](#) > [Vaccine Storage & Handling](#)



[Home](#) Healthcare Professionals /  
Providers Home

Clinical Resources +

Administration Tools -

Vaccine Storage & Handling -

Storage and Handling Resources

Storage and Handling Toolkit

You Call The Shots: Vaccine Storage  
and Handling

Vaccine Administration +

Vaccines for Children (VFC) +

VIS

Reminder Systems and Strategies

Patient Education +

Immunization Training

Vaccine-Preventable Diseases

# Vaccine Storage and Handling Toolkit

## COVID-19 Vaccination Provider Requirements

The Vaccine Storage and Handling Toolkit has been updated with a COVID-19 Vaccine Addendum with information on Storage and Handling best practices for COVID-19 vaccines. All vaccination providers participating in the COVID-19 Vaccination Program must store and handle COVID-19 vaccines under proper conditions to maintain the cold chain as outlined in the toolkit and addendum.

This addendum will be updated with specific storage and handling information for each COVID-19 product. Please sign up for email alerts on this page to be notified when updates are made or check this website often.

For more information about COVID-19 vaccination provider requirements and resources on enrollment, ordering, and data in support of vaccination visit [COVID-19 Vaccination Provider Requirements and Support | CDC](#)

The 2021 Vaccine Storage and Handling Toolkit is a comprehensive guide that reflects best practices for vaccine storage and handling from Advisory Committee on Immunization Practices (ACIP) recommendations, product information from vaccine manufacturers, and scientific studies.

The toolkit has been updated for 2021 to clarify language including:

- Beyond use date (BUD)
- Routine maintenance for vaccine storage units
- New definition added to the glossary
- COVID-19 vaccine information



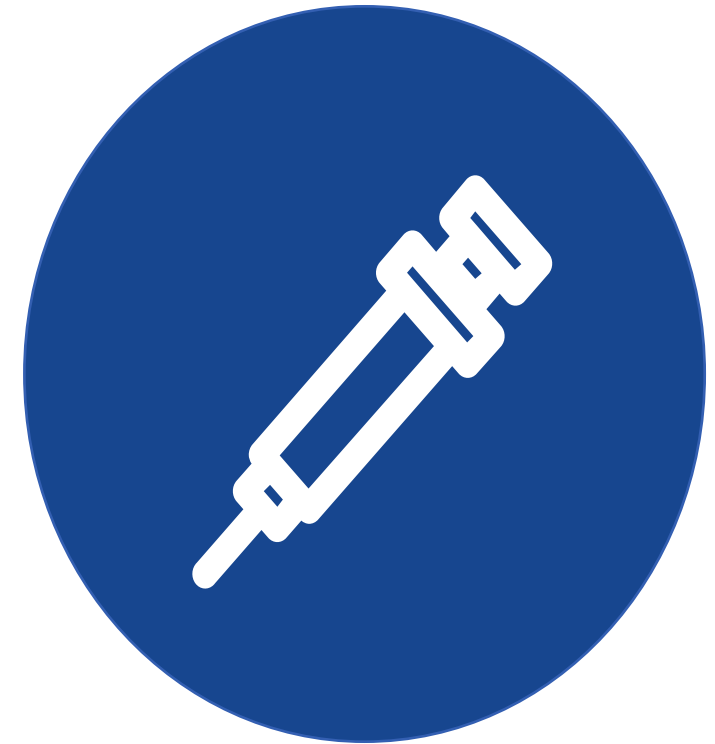
# Vaccine Storage and Handling Toolkit

Updated with COVID-19 Vaccine Storage and Handling Information  
Addendum added September 29, 2021



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## Vaccines & Immunizations

CDC > COVID-19 Vaccination

### COVID-19 Vaccination

Product Info by U.S. Vaccine +

**Interim Clinical Considerations** -

Use of COVID-19 Vaccines in the U.S.

Use of COVID-19 Vaccines in the U.S.: Appendices

FAQs for the Interim Clinical Considerations

Archived COVID-19 Vaccination Schedules

Myocarditis and Pericarditis Considerations

Clinical Care +

Provider Requirements and Support +

Training and Education

Vaccine Recipient Education +

Health Departments +

Planning & Partnerships +

Vaccine Effectiveness Research

# Use of COVID-19 Vaccines in the United States

[Print](#)

## Interim Clinical Considerations

### Summary of recent changes (last updated January 27, 2023):

- As of January 26, 2023, EVUSHELD™ is not currently authorized for SARS-CoV-2 pre-exposure prophylaxis in the United States.

### Reference Materials

- [Summary Document for Interim Clinical Considerations](#) (Updated 12/12/2022)
- [Interim COVID-19 Immunization Schedule](#) (Updated 12/12/2022)
- [COVID-19 Vaccination Schedule Infographic](#)
- [COVID-19 Vaccination Schedule Infographic \(Immunocompromised\)](#)
- [Special Situations for COVID-19 Vaccination of Children and Adolescents: Age Transitions and Interchangeability](#) (Updated 12/09/2022)
- [FAQs for the Interim Clinical Considerations](#)

### Get Email Updates

Receive email updates about this page.

[What's this?](#)

[Get Email Updates](#)

## COVID-19 Vaccines, Recommendations, and Schedules

[Overview of COVID-19 vaccination](#)

[Guidance for people who are \*\*not\*\* immunocompromised](#)

[Guidance for people who \*\*are\*\* immunocompromised](#)

# CDC vaccination resources for healthcare providers

- Schedules App
  - <https://www.cdc.gov/vaccines/schedules/hcp/schedule-app.html>
- Pneumococcal Vaccination App
  - <https://www.cdc.gov/vaccines/vpd/pneumo/hcp/pneumoapp.html>
- Pneumococcal Vaccine Timing for Adults
  - <https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf>
- Adult Vaccine Assessment Tool
  - <https://www2.cdc.gov/nip/adultimmsched>
- Storage and Handling Toolkit
  - <https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html>
- Clinical Considerations for Use of COVID-19 Vaccines
  - <https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html>

# CDC Contact Information

## ■ Immunization call center

- 1-800-232-4636 (1-800-CDC-INFO)
- 8:00 am through 8:00 pm
- English or Spanish
- Questions about immunization or vaccine-preventable diseases, to find vaccination locations, or to order single copies of immunization materials

## ■ Email

- [nipinfo@cdc.gov](mailto:nipinfo@cdc.gov)
  - Health care providers can submit questions about immunization or vaccine-preventable diseases.
  - Response usually within 24 hours
- [CISAeval@cdc.gov](mailto:CISAeval@cdc.gov)
  - U.S. health care providers can request consultation with CISA Project about complex vaccine safety questions for patients who reside in U.S.
  - Clinical Immunization Safety Assessment Project (CISA) needs access to medical records

# Combined Immunization Schedule Work Group 2023

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# Thank You!

## Questions?

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

