### Recommended Adult Immunization Schedule

**for ages 19 years or older**

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

### Vaccines in the Adult Immunization Schedule*

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Abbreviation(s)</th>
<th>Trade name(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 vaccine</td>
<td>1vCOV-mRNA</td>
<td>Comirnaty®/Pfizer-BioNTech COVID-19 Vaccine</td>
</tr>
<tr>
<td></td>
<td>2vCOV-mRNA</td>
<td>SPIKEVAX®/Moderna COVID-19 Vaccine</td>
</tr>
<tr>
<td></td>
<td>1vCOV-ValS</td>
<td>Moderna COVID-19 Vaccine, Bivalent</td>
</tr>
<tr>
<td>Haemophilus influenza type b vaccine</td>
<td>Hib</td>
<td>ActHIB®/Hibrix®/PedvaxHIB®</td>
</tr>
<tr>
<td>Hepatitis A vaccine</td>
<td>HepA</td>
<td>Havrix®/Vaqta®</td>
</tr>
<tr>
<td>Hepatitis A and hepatitis B vaccine</td>
<td>HepA/HepB</td>
<td>Twinrix®</td>
</tr>
<tr>
<td>Hepatitis B vaccine</td>
<td>HepB</td>
<td>Engerix-B®/Heplisav-B®/PreHevBrio®/Recombivax HB®</td>
</tr>
<tr>
<td>Human papillomavirus vaccine</td>
<td>HPV</td>
<td>Gardasil® 9®</td>
</tr>
<tr>
<td>Influenza vaccine (inactivated)</td>
<td>IIV4</td>
<td>Many brands</td>
</tr>
<tr>
<td>Influenza vaccine (live, attenuated)</td>
<td>LAIV4</td>
<td>FluMist® Quadrivalent</td>
</tr>
<tr>
<td>Influenza vaccine (recombinant)</td>
<td>RIV4</td>
<td>Flublok® Quadrivalent</td>
</tr>
<tr>
<td>Measles, mumps, and rubella vaccine</td>
<td>MMRI</td>
<td>M-M-R®/Priorix®</td>
</tr>
<tr>
<td>Meningococcal serogroups A, C, W, Y vaccine</td>
<td>MenACWY-D</td>
<td>Menactra®/Menveo®/MenQuad®/Bexsero®/Trumenga®</td>
</tr>
<tr>
<td></td>
<td>MenACWY-CRM</td>
<td></td>
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<tr>
<td></td>
<td>MenACWY-ITT</td>
<td></td>
</tr>
<tr>
<td>Meningococcal serogroup B vaccine</td>
<td>MenB-4C</td>
<td>Priorix®</td>
</tr>
<tr>
<td></td>
<td>MenB-FHbp</td>
<td></td>
</tr>
<tr>
<td>Pneumococcal conjugate vaccine</td>
<td>PCV15</td>
<td>Vaxneuvance™</td>
</tr>
<tr>
<td></td>
<td>PCV20</td>
<td>Pneumovax 23®</td>
</tr>
<tr>
<td>Pneumococcal polysaccharide vaccine</td>
<td>PPSV23</td>
<td>Pneumovax 23®</td>
</tr>
<tr>
<td>Poliovirus vaccine</td>
<td>IPV</td>
<td>IPV®</td>
</tr>
<tr>
<td>Tetanus and diphtheria toxins</td>
<td>Td</td>
<td>Tenivac®/Tdap®/Radacel®/Boostrix®</td>
</tr>
<tr>
<td>Tetanus and diphtheria and acellular</td>
<td>Var</td>
<td>Varivax®</td>
</tr>
<tr>
<td>pertussis vaccine</td>
<td>Zoster vaccine, recombinant</td>
<td>Shingrix</td>
</tr>
</tbody>
</table>

*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.

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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 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 National Vaccine Injury Compensation Program (VICP). COVID-19 vaccines that are authorized or approved by the FDA are covered by the Countermeasures Injury Compensation Program (CICP). For more information, see www.hrsa.gov/vaccinecompensation or www.hrsa.gov/cicp.

**Questions or comments**

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

**Helpful information**

- Complete Advisory Committee on Immunization Practices (ACIP) recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2023: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html

**U.S. Department of Health and Human Services**

Centers for Disease Control and Prevention

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https://mrckids.org

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**Recommended by the Advisory Committee on Immunization Practices (ACIP) and approved by the Centers for Disease Control and Prevention (CDC).**

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**Helpful information**

- Complete Advisory Committee on Immunization Practices (ACIP) recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2023: 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
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>19–26 years</th>
<th>27–49 years</th>
<th>50–64 years</th>
<th>≥65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COVID-19</strong></td>
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<tr>
<td><strong>Influenza inactivated</strong> (IIV4) or Influenza recombinant (RIV4)**</td>
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<tr>
<td><strong>Influenza live, attenuated</strong> (LAIV4)</td>
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<tr>
<td><strong>Tetanus, diphtheria, pertussis</strong> (Tdap or Td)</td>
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</tr>
<tr>
<td><strong>Measles, mumps, rubella</strong> (MMR)</td>
<td></td>
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<td></td>
<td>For healthcare personnel, see notes</td>
</tr>
<tr>
<td><strong>Varicella</strong> (VAR)</td>
<td></td>
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<tr>
<td><strong>Zoster recombinant</strong> (RZV)</td>
<td></td>
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<tr>
<td><strong>Human papillomavirus</strong> (HPV)</td>
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<tr>
<td><strong>Pneumococcal</strong> (PCV15, PCV20, PPSV23)</td>
<td></td>
<td></td>
<td></td>
<td>See Notes</td>
</tr>
<tr>
<td><strong>Hepatitis A</strong> (HepA)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Hepatitis B</strong> (HepB)</td>
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<tr>
<td><strong>Meningococcal A, C, W, Y</strong> (MenACWY)</td>
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<tr>
<td><strong>Meningococcal B</strong> (MenB)</td>
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<tr>
<td><strong>Haemophilus influenzae type b</strong> (Hib)</td>
<td></td>
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</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Pregnancy</th>
<th>Immuno-compromised (excluding HIV infection)</th>
<th>HIV infection CD4 percentage and count</th>
<th>Asplenia, complement deficiencies</th>
<th>End-stage renal disease, or on hemodialysis</th>
<th>Heart or lung disease; alcoholism&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
<th>Health care personnel&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Men who have sex with men</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19</td>
<td>See Notes</td>
<td>1 dose annually</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIV4 or RIV4</td>
<td></td>
<td>Contraindicated</td>
<td>Precaution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAIV4</td>
<td></td>
<td>1 dose annually</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Tdap or Td</td>
<td>1 dose Tdap each pregnancy</td>
<td>1 dose Tdap, then Td or Tdap booster every 10 years</td>
<td></td>
<td></td>
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<tr>
<td>MMR</td>
<td>Contraindicated&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Contraindicated</td>
<td>1 or 2 doses depending on indication</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAR</td>
<td>Contraindicated&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Contraindicated</td>
<td>2 doses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RZV</td>
<td>2 doses at age ≥19 years</td>
<td>2 doses at age ≥50 years</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>HPV</td>
<td>Not Recommended&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3 doses through age 26 years</td>
<td>2 or 3 doses through age 26 years depending on age at initial vaccination or condition</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal (PCV15, PCV20, PPSV23)</td>
<td></td>
<td>1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepA</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepB</td>
<td>3 doses (see notes)</td>
<td></td>
<td>2, 3, or 4 doses depending on vaccine or condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MenACWY</td>
<td></td>
<td>1 or 2 doses depending on indication, see notes for booster recommendations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MenB</td>
<td>Precaution</td>
<td>2 or 3 doses depending on vaccine and indication, see notes for booster recommendations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hib</td>
<td></td>
<td>3 doses HSCT&lt;sup&gt;c&lt;/sup&gt; recipients only</td>
<td>1 dose</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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

*Vaccinate after pregnancy.*

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Appendix H
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)
  - **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. See www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html


**Haemophilus influenzae type b vaccination**

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

**Hepatitis A vaccination**

**Routine vaccination**
- **Not at risk but want protection from hepatitis A** (identification of risk factor not required): 2-dose series HepA (Havrix 6–12 months apart or Vaqta 6–18 months apart [minimum interval: 6 months]) or 3-dose series HepA-HepB (Twinrix at 0, 1, 6 months [minimum intervals: dose 1 to dose 2: 4 weeks / dose 2 to dose 3: 5 months])

**Special situations**
- **At risk for hepatitis A virus infection**: 2-dose series HepA or 3-dose series HepA-HepB as above
  - **Chronic liver disease** (e.g., persons with hepatitis B, hepatitis C, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
  - **HIV infection**
  - **Men who have sex with men**
  - **Injection or noninjection drug use**
  - **Persons experiencing homelessness**
  - **Work with hepatitis A virus** in research laboratory or with nonhuman primates with hepatitis A virus infection

**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.

*Note: Heplisav-B and PreHevbrio are not recommended in pregnancy due to lack of safety data in pregnant persons.
**Recommended Adult Immunization Schedule, United States, 2023**

**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 (allIV4) 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
  - 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
Recommended Adult Immunization Schedule, United States, 2023

**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 ≥15% and CD4 count ≥200 cells/mm³ for at least 6 months and no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart; MMR contraindicated for HIV infection with CD4 percentage <15% or CD4 count <200 cells/mm³
- Severe immunocompromising conditions: MMR contraindicated
- Students in postsecondary educational institutions, international travelers, and household or close, personal contacts of immunocompromised persons with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart if previously did not receive any doses of MMR or 1 dose if previously received 1 dose MMR
- 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](https://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), 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 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](https://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 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](https://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.
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.
- 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.
- 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.

Notes

Recommended Adult Immunization Schedule, United States, 2023

Pneumococcal vaccination

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

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.
- 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.
- 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.

*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

*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.
### Notes

**Recommended Adult Immunization Schedule, United States, 2023**

#### Routine vaccination

**Tetanus, diphtheria, and pertussis 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

- 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: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose if previously received 1 dose varicella-containing vaccine; 2-dose series 4–8 weeks apart if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980

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

- Severe immunocompromising conditions: VAR contraindicated

**Zoster vaccination**

- 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/uncompromised-adults.html](http://www.cdc.gov/shingles/vaccination/uncompromised-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)
### Recommended Adult Immunization Schedule, United States, 2023

**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/accp-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*

For COVID-19 vaccine contraindications and precautions see www.cdc.gov/vaccines/covid-19/clinical-considerations/interim-considerations-us.html#contraindications

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Contraindicated or Not Recommended¹</th>
<th>Precautions²</th>
</tr>
</thead>
</table>
| Influenza, egg-based, inactivated injectable (IIV4) | • Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency)  
• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component³ (excluding egg) | • Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine  
• Moderate or severe acute illness with or without fever |
| Influenza, cell culture-based inactivated injectable (ccIIV4, Flucelvax® Quadrivalent) | • Severe allergic reaction (e.g., anaphylaxis) to any ccIIV of any valency, or to any component³ of ccIIV4 | • Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine  
• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, RIV, or LAIV of any valency. If using ccIIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.  
• Moderate or severe acute illness with or without fever |
| Influenza, recombinant injectable (RIV4, Flublok® Quadrivalent) | • Severe allergic reaction (e.g., anaphylaxis) to any RIV of any valency, or to any component³ of RIV4 | • Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine  
• Persons with a history of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any egg-based IIV, ccIIV, or LAIV of any valency. If using RIV4, administer in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions. May consult an allergist.  
• Moderate or severe acute illness with or without fever |
| Influenza, live attenuated [LAIV4, Flumist® Quadrivalent] | • Severe allergic reaction (e.g., anaphylaxis) after previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV of any valency)  
• Severe allergic reaction (e.g., anaphylaxis) to any vaccine component³ (excluding egg)  
• Anatomic or functional asplenia  
• Immunocompromised due to any cause including, but not limited to, medications and HIV infection  
• Close contacts or caregivers of severely immunosuppressed persons who require a protected environment  
• Pregnancy  
• Cochlear implant  
• Active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, ear, or any other cranial CSF leak  
• Received influenza antiviral medications oseltamivir or zanamivir within the previous 48 hours, peramivir within the previous 5 days, or baloxavir within the previous 17 days. | • Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of any type of influenza vaccine  
• Asthma in persons aged 5 years old or older  
• Persons with underlying medical conditions (other than those listed under contraindications) that might predispose to complications after wild-type influenza virus infection (e.g., chronic pulmonary, cardiovascular (except isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus))  
• Moderate or severe acute illness with or without fever |

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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/accp-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/accp-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.
<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Contraindicated or Not Recommended</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Haemophilus influenzae type b</em> (Hib)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component²</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td></td>
<td>• For Hiblitis, ActHib, and PedvaxHib only: History of severe allergic reaction to dry natural latex</td>
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<tr>
<td>Hepatitis A (HepA)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹ including neomycin</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td></td>
<td>• Pregnancy: HepA and PreHevbrio are not recommended due to lack of safety data in pregnant persons. Use other hepatitis A vaccines if HepA is indicated²</td>
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</tr>
<tr>
<td>Hepatitis B (HepB)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹ including yeast</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td></td>
<td>• Pregnancy: HepA and PreHevbrio are not recommended due to lack of safety data in pregnant persons. Use other hepatitis A vaccines if HepA is indicated²</td>
<td></td>
</tr>
<tr>
<td>Hepatitis A- Hepatitis B vaccine</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹ including neomycin and yeast</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td>[HepA-HepB, (Twinrix®)]</td>
<td>• Pregnancy: HPV vaccination not recommended</td>
<td></td>
</tr>
<tr>
<td>Human papillomavirus (HPV)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td></td>
<td>• Pregnancy: HPV vaccination not recommended</td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Moderate or severe acute illness with or without fever</td>
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<td></td>
<td>• 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)</td>
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<tr>
<td></td>
<td>• Pregnancy</td>
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<tr>
<td></td>
<td>• Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent</td>
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<tr>
<td>Meningococcal ACWY (MenACWY) [MenACWY-CRM (Menveo®); MenACWY-D (Menactra®); MenACWY-TT (MenQuadri®)]</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td></td>
<td>• For MenACWY-D and MenACWY-CRM only: severe allergic reaction to any diphtheria toxoid–or CRM197–containing vaccine</td>
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<tr>
<td></td>
<td>• For MenACWY-TT only: severe allergic reaction to a tetanus toxoid–containing vaccine</td>
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<tr>
<td>Meningococcal B (MenB) [MenB-4C (Bexsero); MenB-FHbp (Trumenba)]</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td>Pneumococcal conjugate (PCV15, PCV20)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
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<td></td>
<td>• Severe reaction (e.g., anaphylaxis) to any diphtheria toxoid–containing vaccine or to its vaccine component¹</td>
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</tr>
<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Moderate or severe acute illness with or without fever</td>
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<tr>
<td></td>
<td>• Severe reaction (e.g., anaphylaxis) to any diphtheria toxoid–containing vaccine or to its vaccine component¹</td>
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<td></td>
<td>• Guillain–Barre syndrome (GBS) within 6 weeks after a previous dose of tetanus toxoid–containing vaccine</td>
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<td>• 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</td>
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<tr>
<td></td>
<td>• For MenB-4C only: Latex sensitivity</td>
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<td></td>
<td>• Moderate or severe acute illness with or without fever</td>
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<td></td>
<td>• 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</td>
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<tr>
<td>Varicella (VAR)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Recent (&lt;11 months) receipt of antibody-containing blood product (specific interval depends on product)</td>
</tr>
<tr>
<td></td>
<td>• 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)</td>
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<tr>
<td></td>
<td>• Pregnancy</td>
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<td></td>
<td>• Family history of altered immunocompetence, unless verified clinically or by laboratory testing as immunocompetent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Recent (&lt;11 months) receipt of antibody-containing blood product (specific interval depends on product)</td>
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<td></td>
<td>• Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)</td>
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<tr>
<td></td>
<td>• Use of aspirin or aspirin-containing products</td>
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<td></td>
<td>• Moderate or severe acute illness with or without fever</td>
<td></td>
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<tr>
<td>Zoster recombinant vaccine (RZV)</td>
<td>• Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component¹</td>
<td>• Moderate or severe acute illness with or without fever</td>
</tr>
<tr>
<td></td>
<td>• Current herpes zoster infection</td>
<td></td>
</tr>
</tbody>
</table>

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

https://mrckids.org