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 and other indications (Table 2)
3. Review vaccine types, frequencies, and intervals and considerations for special situations (Notes)

Vaccines in the Adult Immunization Schedule*

**Abbreviations**
- Hib
- HepA
- HepA-HepB
- HepB
- HPV vaccine
- IIV
- LAIV
- RIV
- MMR
- MenACWY
- MenB-4C
- MenB-FHbp
- PCV13
- PPSV23
- Td
- Tdap
- VAR
- RZV
- ZVL

**Trade names**
- ActHIB®, Hiberix®, PedvaxHIB®
- Havrix®, Vaqta®, Twinrix®, Energi B®, Recombivax HB®, Hepliser-B®
- Gardasil 9®, FluMist® quadrivalent, Flublok® quadrivalent
- M-M-R® II, Menactra®, Menveo®, Bexsero®, Trumenba®, Prevnar 13®, Pneumovax® 23
- Tenivac®, TdVac™, Adacel®, Boostrix®, Varivax®

*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 or 800-822-7967

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

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

**Helpful information**
- Complete ACIP recommendations: www.cdc.gov/vaccines/hcp/acip-recs/index.html
- General Best Practice Guidelines for Immunization (including contraindications and precautions): www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Vaccine information statements: www.cdc.gov/vaccines/hcp/vis/index.html
- Travel vaccine recommendations: www.cdc.gov/travel
- Recommended Child and Adolescent Immunization Schedule, United States, 2020: www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html

Download the CDC Vaccine Schedules App for providers at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html.
<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>Influenza inactivated (IIV) or Influenza recombinant (RIV) or Influenza live, attenuated (LAIV)</td>
<td></td>
<td></td>
<td>1 dose annually</td>
<td></td>
</tr>
<tr>
<td>Tetanus, diphtheria, pertussis (Tdap or Td)</td>
<td></td>
<td></td>
<td>1 dose Tdap, then Td or Tdap booster every 10 years</td>
<td></td>
</tr>
<tr>
<td>Measles, mumps, rubella (MMR)</td>
<td>1 or 2 doses depending on indication (if born in 1957 or later)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicella (VAR)</td>
<td>2 doses (if born in 1980 or later)</td>
<td>2 doses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoster recombinant (RZV) (preferred)</td>
<td></td>
<td></td>
<td>2 doses</td>
<td></td>
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<tr>
<td>Zoster live (ZVL)</td>
<td></td>
<td></td>
<td>1 dose</td>
<td></td>
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<tr>
<td>Human papillomavirus (HPV)</td>
<td>2 or 3 doses depending on age at initial vaccination or condition</td>
<td>27 through 45 years</td>
<td></td>
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<tr>
<td>Pneumococcal conjugate (PCV13)</td>
<td></td>
<td></td>
<td>1 dose</td>
<td>65 years and older</td>
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<tr>
<td>Pneumococcal polysaccharide (PPSV23)</td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication</td>
<td>1 dose</td>
</tr>
<tr>
<td>Hepatitis A (HepA)</td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Hepatitis B (HepB)</td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
<td></td>
</tr>
<tr>
<td>Meningococcal A, C, W, Y (MenACWY)</td>
<td>1 or 2 doses depending on indication, see notes for booster recommendations</td>
<td></td>
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<td></td>
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<tr>
<td>Meningococcal B (MenB)</td>
<td>2 or 3 doses depending on vaccine and indication, see notes for booster recommendations</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Haemophilus influenzae type b (Hib)</td>
<td>1 or 3 doses depending on indication</td>
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</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>
<thead>
<tr>
<th>Vaccine</th>
<th>Pregnancy</th>
<th>Immuno-compromised (excluding HIV infection)</th>
<th>HIV infection CD4 count</th>
<th>Asplenia, complement deficiencies</th>
<th>End-stage renal disease; or on hemodialysis</th>
<th>Heart or lung disease, alcoholism¹</th>
<th>Chronic liver disease</th>
<th>Diabetes</th>
<th>Health care personnel²</th>
<th>Men who have sex with men</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIV or RIV or LAIV</td>
<td></td>
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<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>
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<td></td>
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<tr>
<td>MMR</td>
<td>NOT RECOMMENDED</td>
<td></td>
<td>1 or 2 doses depending on indication</td>
<td></td>
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<tr>
<td>VAR</td>
<td>NOT RECOMMENDED</td>
<td></td>
<td>2 doses</td>
<td></td>
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<tr>
<td>RZV (preferred) or ZVL</td>
<td>DELAY</td>
<td></td>
<td>2 doses at age ≥50 years</td>
<td></td>
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<tr>
<td>HPV</td>
<td>DELAY</td>
<td>3 doses through age 26 years</td>
<td>2 or 3 doses through age 26 years</td>
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<tr>
<td>PCV13</td>
<td></td>
<td></td>
<td>1 dose</td>
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<tr>
<td>PPSV23</td>
<td></td>
<td></td>
<td>1, 2, or 3 doses depending on age and indication</td>
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<tr>
<td>HepA</td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
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<tr>
<td>HepB</td>
<td></td>
<td></td>
<td>2 or 3 doses depending on vaccine</td>
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<tr>
<td>MenACWY</td>
<td></td>
<td></td>
<td>1 or 2 doses depending on indication, see notes for booster recommendations</td>
<td></td>
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<tr>
<td>MenB</td>
<td>PRECAUTION</td>
<td></td>
<td>2 or 3 doses depending on vaccine and indication, see notes for booster recommendations</td>
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<tr>
<td>Hib</td>
<td></td>
<td></td>
<td>3 doses HSCT³ recipients only</td>
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<td></td>
<td></td>
<td>1 dose</td>
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</tbody>
</table>

1. Precaution for LAIV does not apply to alcoholism. 2. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.
Chronic liver disease

Sexual exposure risk

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)

Settings for exposure, including:

Age 9 through 14 years at initial vaccination and

Incarcerated persons

Travel in countries with high or intermediate endemic hepatitis B

Pregnancy if at risk for infection or severe outcome from infection during pregnancy

Incarcerated persons

Travel in countries with high or intermediate endemic hepatitis B

Pregnancy if at risk for infection or severe outcome from infection during pregnancy (Heplisav-B not currently recommended due to lack of safety data in pregnant women)
**Recommended Adult Immunization Schedule, United States, 2020**

### Influenza vaccination

**Routine vaccination**
- **Persons age 6 months or older:** 1 dose any influenza vaccine appropriate for age and health status annually
- For additional guidance, see [www.cdc.gov/flu/professionals/index.htm](http://www.cdc.gov/flu/professionals/index.htm)

### Special situations

- **Egg allergy, hives only:** 1 dose any influenza vaccine appropriate for age and health status annually
- **Egg allergy more severe than hives** (e.g., angioedema, respiratory distress): 1 dose any influenza vaccine appropriate for age and health status annually in medical setting under supervision of health care provider who can recognize and manage severe allergic reactions
- **LAIV should not be used** in persons with the following conditions or situations:
  - History of severe allergic reaction to any vaccine component (excluding egg) or to a previous dose of any influenza vaccine
  - Immunocompromised due to any cause (including medications and HIV infection)
  - Anatomic or functional asplenia
  - Cochlear implant
  - Cerebrospinal fluid-oropharyngeal communication
  - Close contacts or caregivers of severely immnosuppressed persons who require a protected environment
  - Pregnancy
  - Received influenza antiviral medications within the previous 48 hours
- **History of Guillain-Barré syndrome within 6 weeks of previous dose of influenza vaccine:** Generally should not be vaccinated unless vaccination benefits outweigh risks for those at higher risk for severe complications from influenza

### Measles, mumps, and rubella vaccination

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

### Special situations

- **Pregnancy with no evidence of immunity to rubella:** MMR contraindicated during pregnancy; after pregnancy (before discharge from health care facility), 1 dose
- **Nonpregnant women of childbearing age with no evidence of immunity to rubella:** 1 dose
- **HIV infection with CD4 count ≥200 cells/μL 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 in HIV infection with CD4 count <200 cells/μL
- **Severe immunocompromising conditions:** MMR contraindicated
- **Students in postsecondary educational institutions, international travelers, and household or close, personal contacts of immunocompromised persons with no evidence of immunity to measles, mumps, or rubella:** 2-dose series at least 4 weeks apart if previously did not receive any doses of MMR or 1 dose if previously received 1 dose MMR
- **Health care personnel:**
  - Born in 1957 or later with no evidence of immunity to measles, mumps, or rubella: 2-dose series at least 4 weeks apart for measles or mumps or at least 1 dose for rubella
  - Born before 1957 with no evidence of immunity to measles, mumps, or rubella: Consider 2-dose series at least 4 weeks apart for measles or mumps or 1 dose for rubella

### Meningococcal vaccination

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

**Shared clinical decision-making for MenB**
- **Adolescents and young adults age 16 through 23 years (age 16 through 18 years preferred) not at increased risk for meningococcal disease:** Based on shared clinical decision-making, 2-dose series MenB-4C at least 1 month apart or 2-dose series MenB-FHbp at 0, 6 months (if dose 2 was administered less than 6 months after dose 1, administer dose 3 at least 4 months after dose 2); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series)

**Special situations for MenB**
- **Anatomical or functional asplenia (including sickle cell disease), persistent complement component deficiency, complement inhibitor (e.g., eculizumab, ravulizumab) use, microbiologists routinely exposed to *Neisseria meningitidis***: 2-dose primary series MenB-4C (Bexsero) at least 1 month apart or 3-dose primary series MenB-FHbp (Trumenba) at 0, 1–2, 6 months (if dose 2 was administered at least 6 months after dose 1, dose 3 not needed); MenB-4C and MenB-FHbp are not interchangeable (use same product for all doses in series); 1 dose MenB booster 1 year after primary series and revaccinate every 2–3 years if risk remains
- **Pregnancy:** Delay MenB until after pregnancy unless at increased risk and vaccination benefits outweigh potential risks
**Pneumococcal vaccination**

**Routine vaccination**
- Age 65 years or older (immunocompetent—see [www.cdc.gov/mmwr/volumes/68/ww/mm6846a5.htm?_cid=mm6846a5_w]): 1 dose PPSV23
  - If PPSV23 was administered prior to age 65 years, administer another dose PPSV23 at least 5 years after previous dose

**Shared clinical decision-making**
- Age 65 years and older (immunocompetent): 1 dose PCV13 followed by 1 dose PPSV23 at least 5 years after previous dose
  - If both PCV13 and PPSV23 are to be administered, PCV13 should be administered first
  - PCV13 and PPSV23 should be administered at least 1 year apart
  - PCV13 and PPSV23 should not be administered during the same visit

**Special situations**
(see [www.cdc.gov/mmwr/volumes/68/ww/mm6846a5.htm?_cid=mm6846a5_w])
- Age 19 through 64 years with chronic medical conditions (chronic heart [excluding hypertension], lung, or liver disease, diabetes), alcoholism, or cigarette smoking: 1 dose PPSV23
- Age 19 years or older with immunocompromising conditions [congenital or acquired immunodeficiency (including B- and T-lymphocyte deficiency, complement deficiencies, phagocytic disorders, HIV infection), chronic renal failure, nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression [e.g., drug or radiation therapy], solid organ transplant, multiple myeloma] or anatomical or functional asplenia (including sickle cell disease and other hemoglobinopathies): 1 dose PCV13 followed by 1 dose PPSV23 at least 8 weeks later, then another dose PPSV23 at least 5 years after previous PPSV23; at age 65 years or older, administer 1 dose PPSV23 at least 5 years after most recent PPSV23 (note: only 1 dose PPSV23 recommended at age 65 years or older)
- Age 19 years or older with cerebrospinal fluid leak or cochlear implant: 1 dose PCV13 followed by 1 dose PPSV23 at least 8 weeks later; at age 65 years or older, administer another dose PPSV23 at least 5 years after PPSV23 (note: only 1 dose PPSV23 recommended at age 65 years or older)

**Tetanus, diphtheria, and pertussis vaccination**

**Routine vaccination**
- Previously did not receive Tdap at or after age 11 years: 1 dose Tdap, thenTd or Tdap every 10 years

**Special situations**
- Previously did not receive primary vaccination series for tetanus, diphtheria, or pertussis: At least 1 dose Tdap followed by 1 dose Td or Tdap at least 4 weeks after Tdap and another dose Td or Tdap 6–12 months after last Td or Tdap (Tdap can be substituted for any Td dose, but preferred as first dose); Td or Tdap every 10 years thereafter
- Pregnancy: 1 dose Tdap during each pregnancy, preferably in early part of gestational weeks 27–36
- For information on use of Td or Tdap as tetanus prophylaxis in wound management, see [www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm](http://www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm)

**Varicella vaccination**

**Routine vaccination**
- No evidence of immunity to varicella: 2-dose series 4–8 weeks apart if previously did not receive varicella-containing vaccine (VAR or MMRV [measles-mumps-rubella-varicella vaccine] for children); if previously received 1 dose varicella-containing vaccine, 1 dose at least 4 weeks after first dose
  - Evidence of immunity: U.S.-born before 1980 (except for pregnant women and health care personnel [see below]), documentation of 2 doses varicella-containing vaccine at least 4 weeks apart, diagnosis or verification of history of varicella or herpes zoster by a health care provider, laboratory evidence of immunity or disease

**Special situations**
- Pregnancy with no evidence of immunity to varicella: VAR contraindicated during pregnancy; after pregnancy (before discharge from health care facility) 1 dose if previously received 1 dose varicella-containing vaccine or dose 1 of 2-dose series (dose 2: 4–8 weeks later) if previously did not receive any varicella-containing vaccine, regardless of whether U.S.-born before 1980
- Health care personnel with no evidence of immunity to varicella: 1 dose if previously received 1 dose 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 count ≥200 cells/μL with no evidence of immunity: Vaccination may be considered (2 doses, administered 3 months apart); VAR contraindicated in HIV infection with CD4 count <200 cells/μL
- Severe immunocompromising conditions: VAR contraindicated

**Zoster vaccination**

**Routine vaccination**
- Age 50 years or older: 2-dose series RZV (Shingrix) 2–6 months apart (minimum interval: 4 weeks; repeat dose if administered too soon), regardless of previous herpes zoster or history of ZVL (Zostavax) vaccination (administer RZV at least 2 months after ZVL)
- Age 60 years or older: 2-dose series RZV 2–6 months apart (minimum interval: 4 weeks; repeat if administered too soon) or 1 dose ZVL if not previously vaccinated. RZV preferred over ZVL (if previously received ZVL, administer RZV at least 2 months after ZVL)

**Special situations**
- Pregnancy: ZVL contraindicated; consider delaying RZV until after pregnancy if RZV is otherwise indicated
- Severe immunocompromising conditions (including HIV infection with CD4 count <200 cells/μL): ZVL contraindicated; recommended use of RZV under review