

RECOMMENDED ADULT IMMUNIZATION SCHEDULE FOR • 2013**

This schedule indicates the recommended age groups and medical indications for routine administration of currently licensed vaccines for persons ≥19 years. Licensed combination vaccines may be used whenever any components of the combination are indicated and when the vaccine's other components are not contraindicated. For detailed recommendations, consult the manufacturers' package inserts and the complete statements from ACIP (www.cdc.gov/vaccines/pubs/acip-list.htm).

Vaccine	Age group ▶	For all persons in this category who meet the age requirements and who lack documentation of vaccination or have no evidence of previous infection		Recommended if some other risk factor is present (eg, on the basis of medical, occupational, lifestyle, or other indications)		No recommendation	
		19–21 yrs	22–26 yrs	27–49 yrs	50–59 yrs	60–64 yrs	≥65 yrs
Influenza ^{2,*}		1 dose annually					
Tetanus, diphtheria, pertussis (Td/Tdap) ^{3,*}		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs					
Varicella ^{4,*}		2 doses					
Human papillomavirus (HPV) ^{5,*} Female		3 doses					
Human papillomavirus (HPV) ^{5,*} Male		3 doses					
Zoster ⁶						1 dose	
Measles, mumps, rubella (MMR) ^{7,*}		1 or 2 doses					
Pneumococcal polysaccharide (PPSV23) ^{8,9}			1 or 2 doses				1 dose
Pneumococcal 13-valent conjugate (PCV13) ¹⁰		1 dose					
Meningococcal ^{11,*}		1 or more doses					
Hepatitis A ^{12,*}		2 doses					
Hepatitis B ^{13,*}		3 doses					

NOTE: These recommendations must be read along with the footnotes that follow containing number of doses, intervals between doses, and other important information.

*Covered by the Vaccine Injury Compensation Program.

1. Additional information

- Advisory Committee on Immunization Practices (ACIP) vaccine recommendations and additional information are available at: <http://www.cdc.gov/vaccines/pubs/acip-list.htm>.
- Information on travel vaccine requirements and recommendations (eg, for hepatitis A and B, meningococcal, and other vaccines) available at <http://wwwnc.cdc.gov/travel/page/vaccinations.htm>.

2. Influenza vaccination

- Annual vaccination against influenza is recommended for all persons 6 months of age and older.
- Persons aged 6 months and older, including pregnant women, can receive the inactivated influenza vaccine (IIV).
- Healthy, nonpregnant persons aged 2–49 years without high-risk medical conditions can receive either intranasally administered live, attenuated influenza vaccine (LAIV) (FluMist), or IIV. Health-care personnel who care for severely immunocompromised persons (i.e., those who require care in a protected environment) should receive IIV rather than LAIV.
- The intramuscularly or intradermally administered IIV are options for adults aged 18–64 years.
- Adults aged ≥65 years can receive the standard dose IIV or the high-dose IIV (Fluzone High-Dose).

3. Tetanus, diphtheria, and acellular pertussis (Td/Tdap) vaccination

- Administer one dose of Tdap vaccine to pregnant women during each pregnancy (preferred during 27–36 weeks' gestation), regardless of number of years since prior Td or Tdap vaccination.
- Administer Tdap to all other adults who have not previously received Tdap or for whom vaccine status is unknown; can be administered regardless of interval since the most recent tetanus or diphtheria-toxoid containing vaccine.
- Adults with an unknown or incomplete history of completing a 3-dose primary vaccination series with Td-containing vaccines should begin or complete a primary vaccination series including a Tdap dose.
- For unvaccinated adults, administer the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second.
- If incompletely vaccinated (i.e., < 3 doses) adults, administer remaining doses.
- Refer to the ACIP statement for recommendations for administering Td/Tdap as prophylaxis in wound management (see footnote 1).

4. Varicella vaccination

- All adults without evidence of immunity to varicella (as defined below) should receive 2 doses of single-antigen varicella vaccine or a second dose if they have received only 1 dose.
- Special consideration for vaccination should be given to those who
 - have close contact with persons at high risk for severe disease (eg, health-care personnel and family contacts of persons with immunocompromising conditions) or
 - are at high risk for exposure or transmission (eg, teachers; child care employees; residents and staff members of institutional settings, including correctional institutions; college students; military personnel; adolescents and adults living in households with children; nonpregnant women of childbearing age; and international travelers).
- Pregnant women should be assessed for evidence of varicella immunity. Women who do not have evidence of immunity should receive the first dose of varicella vaccine upon completion or termination of pregnancy and before discharge from the health-care facility. The second dose should be administered 4–8 weeks after the first dose.
- Evidence of immunity to varicella in adults includes any of the following:
 - documentation of 2 doses of varicella vaccine at least 4 weeks apart;

- U.S.-born before 1980 (although for health-care personnel and pregnant women, birth before 1980 should not be considered evidence of immunity);
- history of varicella based on diagnosis or verification of varicella by a health-care provider;
- history of herpes zoster based on diagnosis or verification of herpes zoster by a health-care provider; or
- laboratory evidence of immunity or laboratory confirmation of disease.

5. Human papilloma virus (HPV) vaccination

- Two vaccines are licensed for use in females, bivalent HPV vaccine (HPV2) and quadrivalent HPV vaccine (HPV4), and one HPV vaccine for use in males (HPV4).
- For females, either HPV4 or HPV2 is recommended in a 3-dose series for routine vaccination at 11 or 12 years of age, and for those 13 through 26 years of age, if not previously vaccinated.
- For males, HPV4 is recommended in a 3-dose series for routine vaccination at 11 or 12 years of age, and for those 13 through 21 years of age, if not previously vaccinated. Males 22 through 26 years of age may be vaccinated.
- HPV4 is recommended for men who have sex with men (MSM) through age 26 years for those who did not get any or all doses when they were younger.
- Vaccination is recommended for immunocompromised persons (including those with HIV infection) through age 26 years for those who did not get any or all doses when they were younger.
- A complete series for either HPV4 or HPV2 consists of 3 doses. The second dose should be administered 1–2 months after the first dose; the third dose should be administered 6 months after the first dose (at least 24 weeks after the first dose).
- Although HPV vaccination is not specifically recommended for health-care personnel (HCP) based on their occupation, HCP should receive the HPV vaccine if they are in the recommended age group.
- Not recommended for use in pregnant women. However, pregnancy testing is not needed before vaccination. If a woman is found to be pregnant after initiating the vaccination series, no intervention is needed; the remainder of the 3-dose series should be delayed until completion of pregnancy.

6. Zoster vaccination

- A single dose of zoster vaccine is recommended for adults 60 years of age and older regardless of whether they report a prior episode of herpes zoster. Although the vaccine is licensed by the Food and Drug Administration (FDA) for use among and can be administered to persons 50 years and older, ACIP recommends that vaccination begins at 60 years of age.
- Persons with chronic medical conditions may be vaccinated unless their condition constitutes a contraindication, such as pregnancy or severe immunodeficiency.
- Although zoster vaccination is not specifically recommended for health-care personnel (HCP), HCP should receive the vaccine if they are in the recommended age group.

7. Measles, mumps, rubella (MMR) vaccination

- Adults born before 1957 generally are considered immune to measles and mumps. All adults born in 1957 or later should have documentation of 1 or more doses of MMR vaccine unless they have a medical contraindication to the vaccine, or laboratory evidence of immunity to each of the three diseases. Documentation of provider-diagnosed disease is not considered acceptable evidence of immunity for measles, mumps, or rubella.

Measles component:

- A routine second dose of MMR vaccine, administered a minimum of 28 days after the first dose, is recommended for adults who
 - are students in postsecondary educational institutions;

(continued)

Measles component: (continued)

- work in a health-care facility; or
- plan to travel internationally.
- Persons who received inactivated (killed) measles vaccine or measles vaccine of unknown type from 1963 to 1967 should be revaccinated with 2 doses of MMR vaccine.

Mumps component:

- A routine second dose of MMR vaccine, administered a minimum of 28 days after the first dose, is recommended for adults who
 - are students in postsecondary educational institutions;
 - work in a health-care facility; or
 - plan to travel internationally.
- Persons vaccinated before 1979 with either killed mumps vaccine or mumps vaccine of unknown type who are at high risk for mumps infection (eg, persons who are working in a health-care facility) should be considered for revaccination with 2 doses of MMR vaccine.

Rubella component:

- For women of childbearing age, regardless of birth year, rubella immunity should be determined. If there is no evidence of immunity, women who are not pregnant should be vaccinated. Pregnant women who do not have evidence of immunity should receive MMR vaccine upon completion or termination of pregnancy and before discharge from the health-care facility.

Health-care personnel born before 1957:

- For unvaccinated health-care personnel born before 1957 who lack laboratory evidence of measles, mumps, and/or rubella immunity or laboratory confirmation of disease, health-care facilities should consider routinely vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval for measles and mumps or 1 dose of MMR vaccine for rubella.

8. Pneumococcal polysaccharide (PPSV23) vaccination

- Vaccinate all persons with the following indications:
 - all adults aged ≥65 years;
 - adults <65 years with chronic lung disease (including chronic obstructive pulmonary disease, emphysema, and asthma); chronic cardiovascular diseases; diabetes mellitus; chronic renal failure; nephrotic syndrome; chronic liver disease (including cirrhosis); alcoholism; cochlear implants; cerebrospinal fluid leaks; immunocompromising conditions; and functional or anatomic asplenia (eg, sickle cell disease and other hemoglobinopathies, congenital or acquired asplenia, splenic dysfunction, or splenectomy [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]);
 - residents of nursing homes or long-term care facilities; and
 - adults who smoke cigarettes.
- Persons with immunocompromising conditions and other selected conditions are recommended to receive PCV13 and PPSV23 vaccines. See footnote #10 for information on timing of PCV13 and PPSV23 vaccinations.
- Persons with asymptomatic or symptomatic HIV infection should be vaccinated as soon as possible after their diagnosis.
- When cancer chemotherapy or other immunosuppressive therapy is being considered, the interval between vaccination and initiation of immunosuppressive therapy should be at least 2 weeks. Avoid vaccination during chemotherapy or radiation therapy.
- Routine use of PPSV23 is not recommended for American Indians/Alaska Natives or other persons age <65 years unless they have underlying medical conditions that are PPSV23 indications. However, public health authorities may consider recommending PPSV23 for American Indians/Alaska Natives who are living in areas where the risk for invasive pneumococcal disease is increased.
- When indicated, PPSV23 should be administered to patients who are uncertain of their vaccination status and there is no record of previous vaccination. When PCV13 is also indicated, a dose of PCV13 should be given first (see footnote #10).

9. Revaccination with PPSV23

- One-time revaccination 5 years after the first dose is recommended for persons 19 through 64 years of age with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (eg, sickle cell disease or splenectomy); and for persons with immunocompromising conditions.
- Persons who received 1 or 2 doses of PPSV23 before age 65 years for any indication should receive another dose of the vaccine at age 65 years or later if at least 5 years have passed since their previous dose.
- No further doses are needed for persons vaccinated with PPSV23 at or after age 65 years.

10. Pneumococcal conjugate 13-valent vaccination (PCV13)

- Adults aged ≥19 years with immunocompromising conditions (including chronic renal failure and nephrotic syndrome), functional or anatomic asplenia, CSF leaks or cochlear implants, and who have not previously received PCV13 or PPSV23 should receive a single dose of PCV13 followed by a dose of PPSV23 at least 8 weeks later.
- Adults aged ≥19 years with the aforementioned conditions who have previously received one or more doses of PPSV23 should receive a dose of PCV13 one or more years after the last PPSV23 dose was received. If additional doses of PPSV23 required, the first such dose should be given no sooner than 8 weeks after PCV13 and at least 5 years since the most recent dose of PPSV23.
- When indicated, PCV13 should be administered to patients who are uncertain of their vaccination status history and there is no record of previous vaccination.
- Although PCV13 is licensed by FDA for use among and can be administered to persons aged ≥50 years, ACIP recommends PCV13 for adults aged ≥19 years with the specific medical conditions noted above.

11. Meningococcal vaccination

- Administer 2 doses of meningococcal conjugate vaccine quadrivalent (MCV4) at

- least 2 months apart to adults with functional asplenia or persistent complement component deficiencies.
- HIV-infected persons who are vaccinated should also receive 2 doses.
- Administer a single dose of meningococcal vaccine to microbiologists routinely exposed to isolates of *Neisseria meningitidis*, military recruits, and persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic.
- First-year college students up through age 21 years who are living in residence halls should be vaccinated if they have not received a dose on or after their 16th birthday.
- MCV4 is preferred for adults with any of the preceding indications who are 55 years old and younger; meningococcal polysaccharide vaccine (MPSV4) is preferred for adults 56 years and older.
- Revaccination with MCV4 every 5 years is recommended for adults previously vaccinated with MCV4 or MPSV4 who remain at increased risk for infection (eg, adults with anatomic or functional asplenia or persistent complement component deficiencies).

12. Hepatitis A vaccination

- Vaccinate any person seeking protection from hepatitis A virus (HAV) infection and persons with any of the following indications:
 - men who have sex with men and persons who use injection or non-injection illicit drugs;
 - persons working with HAV-infected primates or with HAV in a research laboratory setting;
 - persons with chronic liver disease and persons who receive clotting factor concentrates;
 - persons traveling to or working in countries that have high or intermediate endemicity of hepatitis A; and
 - unvaccinated persons who anticipate close personal contact (eg, household or regular babysitting) with an international adoptee during the first 60 days after arrival in the United States from a country with high or intermediate endemicity. (See footnote 1 for more information on travel recommendations). The first dose of the 2-dose hepatitis A vaccine series should be administered as soon as adoption is planned, ideally 2 or more weeks before the arrival of the adoptee.
- Single-antigen vaccine formulations should be administered in a 2-dose schedule at either 0 and 6–12 months (Havrix), or 0 and 6–18 months (Vaqta). If the combined hepatitis A and hepatitis B vaccine (Twinrix) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule may be used, administered on days 0, 7, 21 and 30 followed by a booster dose at month 12.

13. Hepatitis B vaccination

- Vaccinate persons with any of the following indications and any person seeking protection from hepatitis B virus (HBV) infection:
 - sexually active persons who are not in a long-term, mutually monogamous relationship (eg, persons with more than one sex partner during the previous 6 months); persons seeking evaluation or treatment for a sexually transmitted disease (STD); current or recent injection-drug users; and men who have sex with men;
 - health-care personnel and public-safety workers who are exposed to blood or other potentially infectious body fluids;
 - persons with diabetes younger than 60 years as soon as feasible after diagnosis; persons with diabetes who are 60 years or older at the discretion of the treating clinician based on increased need for assisted blood glucose monitoring in long-term care facilities, likelihood of acquiring hepatitis B infection, its complications or chronic sequelae, and likelihood of immune response to vaccination;
 - persons with end-stage renal disease, including patients receiving hemodialysis; persons with HIV infection; and persons with chronic liver disease;
 - household contacts and sex partners of persons with chronic HBV infection; clients and staff members of institutions for persons with developmental disabilities; and international travelers to countries with high or intermediate prevalence of chronic HBV infection; and
 - all adults in the following settings: STD treatment facilities; HIV testing and treatment facilities; facilities providing drug-abuse treatment and prevention services; health-care settings targeting services to injection-drug users or men who have sex with men; correctional facilities; end-stage renal disease programs and facilities for chronic hemodialysis patients; and institutions and nonresidential daycare facilities for persons with developmental disabilities.
- Administer missing doses to complete a 3-dose series of hepatitis B vaccine to those persons not vaccinated or not completely vaccinated. The second dose should be administered 1 month after the first dose; the third dose should be given at least 2 months after the second dose (and at least 4 months after the first dose). If the combined hepatitis A and hepatitis B vaccine (Twinrix) is used, give 3 doses at 0, 1, and 6 months; alternatively, a 4-dose Twinrix schedule, administered on days 0, 7, 21 and 30 followed by a booster dose at month 12, may be used.
- Adult patients receiving hemodialysis or with other immunocompromising conditions should receive 1 dose of 40 µg/mL (Recombivax HB) administered on a 3-dose schedule or 2 doses of 20 µg/mL (Engerix-B) administered simultaneously on a 4-dose schedule at 0, 1, 2, and 6 months.

14. Selected conditions for which *Haemophilus influenzae* type b (Hib) vaccine may be used

- 1 dose of Hib vaccine should be considered for persons who have sickle cell disease, leukemia, or HIV infection, or who have anatomic or functional asplenia if they have not previously received Hib vaccine.

15. Immunocompromising conditions

- Inactivated vaccines generally are acceptable (eg, pneumococcal, meningococcal, and influenza [inactivated influenza vaccine]), and live vaccines generally are avoided in persons with immune deficiencies or immunocompromising conditions. Information on specific conditions is available at <http://www.cdc.gov/vaccines/pubs/acip-list.htm>.

**For information on individual vaccines see the product entries in this Section or contact the manufacturer or call the CDC-INFO Contact Center at (800) 232-4636.

*From: Recommended Immunization for Adults Aged 19 Years and Older, United States 2013; <http://www.cdc.gov/vaccines/schedules/hcp/adult.html>

Changes in the Schedule Since Last Release

- Information was added to footnote #1 to direct readers to additional information regarding recommendations for vaccination when vaccination status is unknown.
- Influenza vaccine – Updated Footnote to indicate:
 - The use of the abbreviation IIV for inactivated influenza vaccine and cessation of TIV for trivalent inactivated vaccine. For the 2013–14 influenza season, it is expected that the LAIV will be available only in a quadrivalent formulation; IIV might be available in both trivalent and quadrivalent formulations.
- Tdap and Td vaccines – Updated Footnote to indicate:
 - Tdap vaccine is recommended in pregnant women during each pregnancy, regardless of the interval since prior Td/Tdap vaccination.
 - Tdap vaccine recommended for all other adults, including persons aged ≥65 years, to receive 1 dose of Tdap vaccine.
- Varicella vaccine – Footnote simplified; no changes in recommendations made.
- HPV vaccine – Footnote simplified; no changes in recommendations made. Additional information was added to the footnote regarding HPV vaccination and pregnancy.
- Zoster vaccine – Footnote updated to clarify that ACIP recommends vaccination of persons beginning at age 60 years both for persons with and without underlying health conditions for whom the vaccine is not contraindicated.
- MMR vaccine – Footnote modified to indicate that the new recommendation that a provider diagnosis of measles, mumps, or rubella is not considered acceptable evidence of immunity. Previously, a provider diagnosis of measles or mumps, but not rubella, was considered acceptable evidence of immunity.

- Pneumococcal (PPSV23) vaccine – Footnotes 8 and 9 were updated to clarify:
 - Persons with certain medical conditions are recommended to receive 2 doses of PPSV23 before age 65 years.
 - Those who receive 2 doses of PPSV23 before age 65 years are recommended to receive PPSV23 at age 65 years, as long as it has been 5 years since the most recent dose.
 - The PPSV23 footnote refers to Footnote 10 for pneumococcal conjugate 13-valent vaccine (PCV13) regarding the timing of PCV13 vaccine relative to PPSV23 for those persons recommended to be vaccinated with both pneumococcal vaccines.
- Pneumococcal (PCV13) vaccine – A new footnote was added to indicate:
 - PCV13 is recommended for adults aged ≥19 years with immunocompromising conditions (including chronic renal failure and nephrotic syndrome), functional or anatomic asplenia, cerebrospinal fluid leaks, or cochlear implants.
 - Those not previously vaccinated with PCV13 or PPSV23 should receive a single dose of PCV13, followed by a dose of PPSV23 at least 8 weeks later.
 - Those previously vaccinated with PPSV23 should be vaccinated with PCV13 one year or more after PPSV23 vaccination.
- Hepatitis A vaccine - Footnote updated to clarify that vaccination is recommended for persons with a history of either injection or non-injection illicit drug use.
- Hepatitis B vaccine - Footnote includes minor wording changes and adds information on the vaccine schedule for hepatitis B vaccine series for the Recombivax HB vaccine. The dosing schedules for other hepatitis B vaccines were included in prior years' schedules.