Internal Medicine Grand Rounds
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Presented by Robert Hardy

MMWR™
QuickGuide

# Recommended Adult Immunization Schedule — United States, October 2006–September 2007

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The Advisory Committee on Immunization Practices (ACIP) annually reviews the recommended Adult Immunization Schedule to ensure that the schedule reflects current recommendations for the licensed vaccines. In June 2006, ACIP approved the Adult Immunization Schedule for October 2006–September 2007. This schedule has also been approved by the American Academy of Family Physicians and the American College of Obstetricians and Gynecologists.

## Changes in the Schedule for October 2006–September 2007

The 2006–2007 schedule differs from the previous schedule as follows:

- The broken red line has been deleted on the age-based schedule (Figure 1). Vaccination of persons with specific risk factors is now shown only with purple bars.
- Human papillomavirus (HPV) vaccine has been added to the age-based schedule, with a yellow bar indicating that the vaccine is recommended for women ≤26 years.
- Tetanus, diphtheria, and acellular pertussis (Tdap) vaccine has been added to the age-based schedule, with a hatched yellow bar indicating that Tdap is a one-time, 1-dose recommendation for persons ≤64 years.
- The purple bar for varicella vaccine has been shortened in anticipation of the recommendation for the use of zoster vaccine in persons aged ≥60 years.
- A new column has been added to the medical/other indications schedule (Figure 2) to clarify indications for hepatitis A and B vaccines. The indications "chronic liver disease" and "recipients of clotting factor concentrates" have been removed from the previous schedule's third and fifth columns, respectively, and combined into a new column. The column has a yellow bar for hepatitis A and B vaccines, clarifying that these vaccines are recommended for all persons with these medical indications.
- HPV vaccine has been added to the medical/other indications schedule, with a yellow bar to indicate the vaccine is recommended for women aged ≤26 years with all indications except pregnancy.
- Tdap was added to the medical/other indications schedule, with a hatched yellow bar to indicate that Tdap is a one-time, 1-dose recommendation for all indications except pregnancy.
- The tetanus and diphtheria footnote (#1) has been reworded to reflect ACIP recommendations for use of Tdap.
- A footnote (#2) has been added to reflect ACIP recommendations for HPV vaccination for all women aged ≤26 years.
- The measles, mumps, and rubella (MMR) footnote (#3) has been reworded to reflect ACIP recommendations to administer a second dose of mumps vaccine to adults in certain age groups and with certain risk factors.
- The varicella footnote (#4) has been reworded in accordance with ACIP recommendations for administering a routine second dose for all adults without evidence of immunity. The footnote also has been revised to reflect the new definition of immunity to varicella.
- The influenza footnote (#5) has been revised to reflect recent ACIP recommendations to vaccinate close contacts of children aged 0–59 months rather than 0–23 months (*1*).
- The hepatitis B footnote (#9) has been revised to reflect recommendations to vaccinate any adult seeking protection from hepatitis B virus infection and vaccinate adults in specific settings (e.g., sexually transmitted disease clinics) (*2*).

The Adult Immunization Schedule is available in English and Spanish at http://www.cdc.gov/nip/recs/adult-schedule.htm. General information about adult vaccinations, including recommendations concerning vaccination of person with HIV and other immunosuppressive conditions, is available from state and local health departments and at http://www.cdc.gov/nip. Vaccine information statements are available at http://www.cdc.gov/nip/publications/vis. ACIP statements for each recommended vaccine and provisional vaccine recommendations can be viewed, downloaded, and printed at http://www.cdc.gov/nip/publications/acip-list.htm. Instructions for reporting adverse events to the Vaccine Adverse Event Reporting System are available at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

The Recommended Adult Immunization Schedule has been approved by the Advisory Committee on Immunization Practices, the American College of Obstetricians and Gynecologists, and the American Academy of Family Physicians. The standard *MMWR* footnote format has been modified for publication of this schedule.

Suggested citation: Centers for Disease Control and Prevention. Recommended Adult Immunization Schedule—United States, October 2006–September 2007. MMWR 2006;55:Q1–Q4.

### References

1. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(No. RR-10).
2. CDC. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP). Part II: immunization of adults. MMWR. In press 2006.

**FIGURE 1. Recommended adult immunization schedule, by vaccine and age group — United States, October 2006–September 2007**

| Vaccine | Age group (yrs) 19–49 | 50–64 | ≥65 |
|---|---|---|---|
| Tetanus, diphtheria, pertussis (Td/Tdap)[1]* | 1-dose Td booster every 10 yrs; Substitute 1 dose of Tdap for Td | | |
| Human papillomavirus (HPV)[2]* | 3 doses (females) | | |
| Measles, mumps, rubella (MMR)[3]* | 1 or 2 doses | 1 dose | |
| Varicella[4]* | 2 doses (0, 4–8 wks) | 2 doses (0, 4–8 wks) | |
| Influenza[5]* | 1 dose annually | 1 dose annually | |
| Pneumococcal (polysaccharide)[6,7] | 1–2 doses | | 1 dose |
| Hepatitis A[8]* | 2 doses (0, 6–12 mos, or 0, 6–18 mos) | | |
| Hepatitis B[9]* | 3 doses (0, 1–2, 4–6 mos) | | |
| Meningococcal[10] | 1 or more doses | | |

For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

* Covered by the Vaccine Injury Compensation Program.

**NOTE:** These recommendations must be read along with the footnotes, which can be found on pages Q2–Q4 of this schedule.

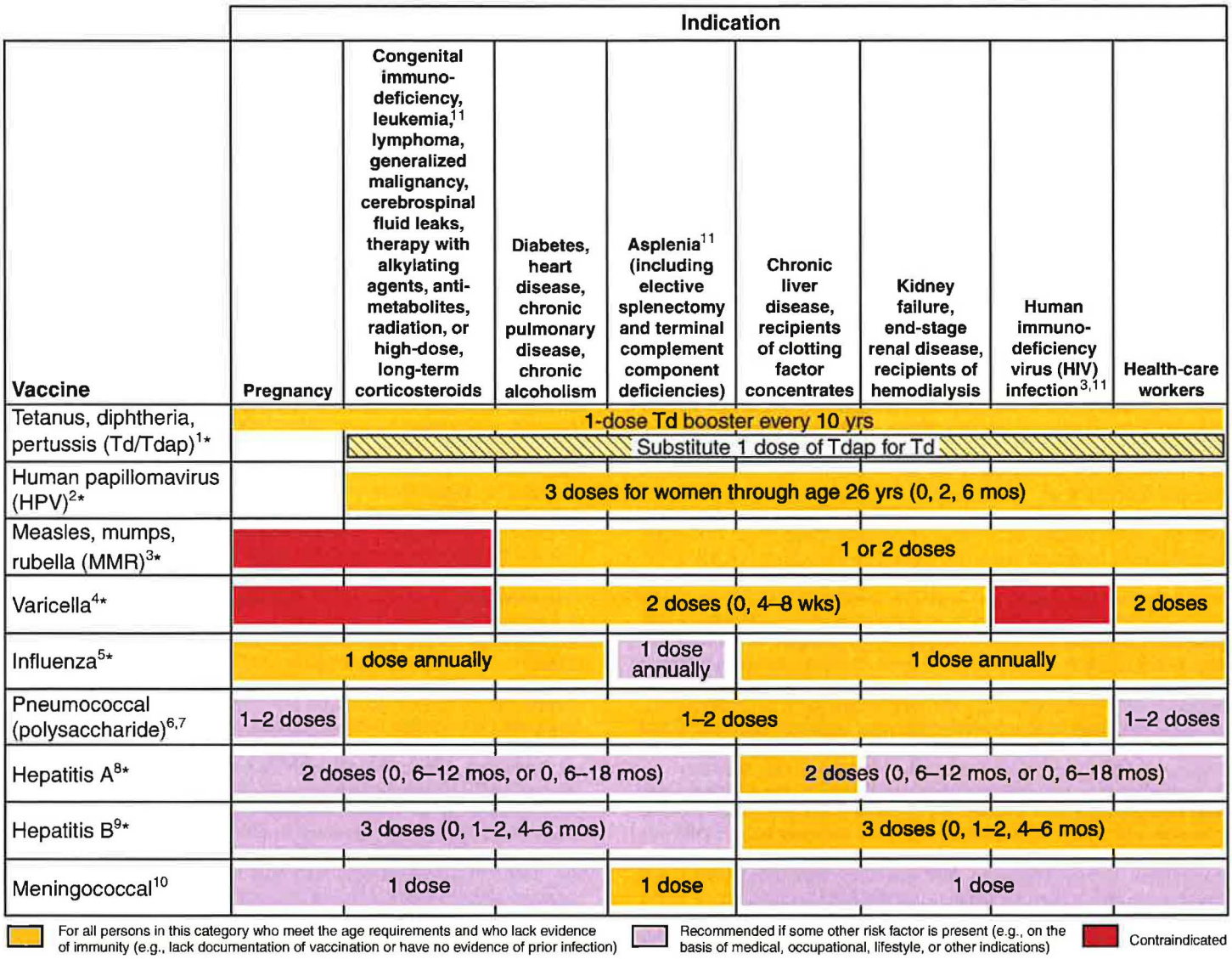
## Approved by the Advisory Committee on Immunization Practices, the American College of Obstetricians and Gynecologists, and the American Academy of Family Physicians

**1. Tetanus, diphtheria, and acellular pertussis (Td/Tdap) vaccination.** Adults with uncertain histories of a complete primary vaccination series with diphtheria and tetanus toxoid–containing vaccines should begin or complete a primary vaccination series. A primary series for adults is 3 doses; administer the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second. Administer a booster dose to adults who have completed a primary series and if the last vaccination was received ≥10 years previously. Tdap or tetanus and diphtheria (Td) vaccine may be used; Tdap should replace a single dose of Td for adults aged <65 years who have not previously received a dose of Tdap (either in the primary series, as a booster or for wound management). Only one of two Tdap products (Adacel® [sanofi pasteur, Swiftwater, Pennsylvania]) is licensed for use in adults. If the person is pregnant and received the last Td vaccination ≥10 years previously, administer Td during the second or third trimester; if the person received the last Td vaccination in <10 years, administer Tdap during the immediate postpartum period. A one-time administration of 1-dose of Tdap with an interval as short as 2 years from a previous Td vaccination is recommended for postpartum women, close contacts of infants aged <12 months, and all health-care workers with direct patient contact. In certain situations, Td can be deferred during pregnancy and Tdap substituted in the immediate postpartum period, or Tdap can be given instead of Td to a pregnant woman after an informed discussion with the woman (see http://www.cdc.gov/nip/publications/acip-list.htm). Consult the ACIP statement for recommendations for administering Td as prophylaxis in wound management (http://www.cdc.gov/mmwr/preview/mmwrhtml/00041645.htm).

**2. Human papillomavirus (HPV) vaccination.** HPV vaccination is recommended for all women aged ≤26 years who have not completed the vaccine series. Ideally, vaccine should be administered before potential exposure to HPV through sexual activity; however, women who are sexually active should still be vaccinated. Sexually active women who have not been infected with any of the HPV vaccine types receive the full benefit of the vaccination. Vaccination is less beneficial for women who have already been infected with one or more of the four HPV vaccine types. A complete series consists of 3 doses. The second dose should be administered 2 months after the first dose; the third dose should be administered 6 months after the first dose. Vaccination is not recommended during pregnancy. If a woman is found to be pregnant after initiating the vaccination series, the remainder of the 3-dose regimen should be delayed until after completion of the pregnancy.

**3. Measles, mumps, rubella (MMR) vaccination.** *Measles component:* adults born before 1957 can be considered immune to measles. Adults born during or after 1957 should receive ≥1 dose of MMR unless they have a medical contraindication, documentation of ≥1 dose, history of measles based on health-care provider diagnosis, or laboratory evidence of immunity. A second dose of MMR is recommended for adults who 1) have been recently exposed to measles or in an outbreak setting; 2) have been previously vaccinated with killed measles vaccine; 3) have been vaccinated with an unknown type of measles vaccine during 1963–1967; 4) are students in postsecondary educational institutions; 5) work in a health-care facility; or 6) plan to travel internationally. Withhold MMR or other measles-containing vaccines from HIV-infected persons with severe immunosuppression. *Mumps component:* adults born before 1957 can generally be considered immune to mumps. Adults born during or after 1957 should receive 1 dose of MMR unless they have a medical contraindication, history of mumps based on health-care provider diagnosis, or laboratory evidence of immunity. A second dose of MMR is recommended for adults who 1) are in an age group that is affected during a mumps outbreak; 2) are students in postsecondary educational institutions; 3) work in a health-care facility; or 4) plan to travel internationally. For unvaccinated health-care workers born before 1957 who do not have other evidence of

**FIGURE 2. Recommended adult immunization schedule, by vaccine and medical and other indications — United States, October 2006–September 2007**




* Covered by the Vaccine Injury Compensation Program.

**NOTE:** These recommendations must be read along with the footnotes, which can be found on pages Q2–Q4 of this schedule.

mumps immunity, consider giving 1 dose on a routine basis and strongly consider giving a second dose during an outbreak. *Rubella component:* administer 1 dose of MMR vaccine to women whose rubella vaccination history is unreliable or who lack laboratory evidence of immunity. For women of childbearing age, regardless of birth year, routinely determine rubella immunity and counsel women regarding congenital rubella syndrome. Do not vaccinate women who are pregnant or who might become pregnant within 4 weeks of receiving vaccine. 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.

**4. Varicella vaccination.** All adults without evidence of immunity to varicella should receive 2 doses of varicella vaccine. Special consideration should be given to those who 1) have close contact with persons at high risk for severe disease (e.g., health-care workers and family contacts of immunocompromised persons) or 2) are at high risk for exposure or transmission (e.g., teachers of young children; 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; non-pregnant women of childbearing age; and international travelers). Evidence of immunity to varicella in adults includes any of the following: 1) documentation of 2 doses of varicella vaccine at least 4 weeks apart; 2) U.S.-born before 1980 (although for health-care workers and pregnant women, birth before 1980 should not be considered evidence of immunity); 3) history of varicella based on diagnosis or verification of varicella by a health-care provider (for a patient reporting a history of or presenting with an atypical case, a mild case, or both, health-care providers should seek either an epidemiologic link with a typical varicella case or evidence of laboratory confirmation, if it was performed at the time of acute disease); 4) history of herpes zoster based on health-care provider diagnosis; or 5) laboratory evidence of immunity or laboratory confirmation of disease. Do not vaccinate women who are pregnant or might become pregnant within 4 weeks of receiving the vaccine. Assess pregnant women for evidence of varicella immunity. Women who do not have evidence of immunity should receive dose 1 of varicella vaccine upon completion or termination of pregnancy and before discharge from the health-care facility. Dose 2 should be administered 4–8 weeks after dose 1.

**5. Influenza vaccination.** *Medical indications:* chronic disorders of the cardiovascular or pulmonary systems, including asthma; chronic metabolic diseases, including diabetes mellitus, renal dysfunction, hemoglobinopathies, or immunosuppression (including immunosuppression caused by medications or HIV); any condition that compromises respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration (e.g., cognitive dysfunction, spinal cord injury, or seizure disorder or other neuromuscular disorder); and pregnancy during the influenza season. No data exist on the risk for severe or complicated influenza disease among persons with asplenia; however, influenza is a risk factor for secondary bacterial infections that can cause severe disease among persons with asplenia. *Occupational indications:* health-care workers and employees of long-term–care and assisted living facilities. *Other indications:* residents of nursing homes and other long-term–care and assisted living facilities; persons likely to transmit influenza to persons at high risk (i.e., in-home household contacts and caregivers of children aged 0–59 months, or persons of all ages with high-risk conditions); and anyone who would like to be vaccinated. Healthy, nonpregnant persons aged 5–49 years without high-risk medical conditions who are not contacts of severely immunocompromised persons in special care units can receive either intranasally administered influenza vaccine (FluMist®) or inactivated vaccine. Other persons should receive the inactivated vaccine.

**6. Pneumococcal polysaccharide vaccination.** *Medical indications:* chronic disorders of the pulmonary system (excluding asthma); cardiovascular diseases; diabetes mellitus; chronic liver diseases, including liver disease as a result of alcohol abuse (e.g., cirrhosis); chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]); immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection [vaccinate as close to diagnosis as possible when CD4 cell counts are highest], leukemia, lymphoma, multiple myeloma, Hodgkin disease, generalized malignancy, or organ or bone marrow transplantation); chemotherapy with alkylating agents, antimetabolites, or high-dose, long-term corticosteroids; and cochlear implants. *Other indications:* Alaska Natives and certain American Indian populations and residents of nursing homes or other long-term–care facilities.

**7. Revaccination with pneumococcal polysaccharide vaccine.** One-time revaccination after 5 years for persons with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); immunosuppressive conditions (e.g., congenital immunodeficiency, HIV infection, leukemia, lymphoma, multiple myeloma, Hodgkin disease, generalized malignancy, or organ or bone marrow transplantation); or chemotherapy with alkylating agents, antimetabolites, or high-dose, long-term corticosteroids. For persons aged ≥65 years, one-time revaccination if they were vaccinated ≥5 years previously and were aged <65 years at the time of primary vaccination.

**8. Hepatitis A vaccination.** *Medical indications:* persons with chronic liver disease and persons who receive clotting factor concentrates. *Behavioral indications:* men who have sex with men and persons who use illegal drugs. *Occupational indications:* persons working with hepatitis A virus (HAV)–infected primates or with HAV in a research laboratory setting. *Other indications:* persons traveling to or working in countries that have high or intermediate endemicity of hepatitis A (a list of countries is available at http://www.cdc.gov/travel/diseases.htm) and any person who would like to obtain immunity. Current vaccines should be administered in a 2-dose schedule at either 0 and 6–12 months, or 0 and 6–18 months. If the combined hepatitis A and hepatitis B vaccine is used, administer 3 doses at 0, 1, and 6 months.

**9. Hepatitis B vaccination.** *Medical indications:* persons with end-stage renal disease, including patients receiving hemodialysis; persons seeking evaluation or treatment for a sexually transmitted disease (STD); persons with HIV infection; persons with chronic liver disease; and persons who receive clotting factor concentrates. *Occupational indications:* health-care workers and public-safety workers who are exposed to blood or other potentially infectious body fluids. *Behavioral indications:* sexually active persons who are not in a long-term, mutually monogamous relationship (i.e., persons with >1 sex partner during the previous 6 months); current or recent injection-drug users; and men who have sex with men. *Other indications:* household contacts and sex partners of persons with chronic hepatitis B virus (HBV) infection; clients and staff members of institutions for persons with developmental disabilities; all clients of STD clinics; international travelers to countries with high or intermediate prevalence of chronic HBV infection (a list of countries is available at http://www.cdc.gov/travel/diseases.htm); and any adult seeking protection from HBV infection. Settings where hepatitis B vaccination is recommended for all adults: STD treatment facilities; HIV testing and treatment facilities; facilities providing drug-abuse treatment and prevention services; health-care settings providing services for 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. *Special formulation indications:* for adult patients receiving hemodialysis and other immunocompromised adults, 1 dose of 40 μg/mL (Recombivax HB®) or 2 doses of 20 μg/mL (Engerix-B®).

**10. Meningococcal vaccination.** *Medical indications:* adults with anatomic or functional asplenia, or terminal complement component deficiencies. *Other indications:* first-year college students living in dormitories; microbiologists who are 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 (e.g., the "meningitis belt" of sub-Saharan Africa during the dry season [December–June]), particularly if their contact with local populations will be prolonged. Vaccination is required by the government of Saudi Arabia for all travelers to Mecca during the annual Hajj. Meningococcal conjugate vaccine is preferred for adults with any of the preceding indications who are aged ≤55 years, although meningococcal polysaccharide vaccine (MPSV4) is an acceptable alternative. Revaccination after 5 years might be indicated for adults previously vaccinated with MPSV4 who remain at high risk for infection (e.g., persons residing in areas in which disease is epidemic).

**11. Selected conditions for which *Haemophilus influenzae* type b (Hib) vaccine may be used.** Hib conjugate vaccines are licensed for children aged 6 weeks–71 months. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults with the chronic conditions associated with an increased risk for Hib disease. However, studies suggest good immunogenicity in patients who have sickle cell disease, leukemia, or HIV infection or who have had splenectomies; administering vaccine to these patients is not contraindicated.

This schedule indicates the recommended age groups and medical indications for routine administration of currently licensed vaccines for persons aged ≥19 years, as of October 1, 2006. 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 on all vaccines, including those used primarily for travelers or that are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (http://www.cdc.gov/nip/publications/acip-list.htm).

Report all clinically significant postvaccination reactions to the Vaccine Adverse Event Reporting System (VAERS). Reporting forms and instructions on filing a VAERS report are available at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at http://www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. To file a claim for vaccine injury, contact the U.S. Court of Federal Claims, 717 Madison Place, N.W., Washington, D.C. 20005; telephone, 202-357-6400.

Additional information about the vaccines in this schedule and contraindications for vaccination is also available at http://www.cdc.gov/nip or from the CDC-INFO Contact Center at 800-CDC-INFO (800-232-4636) in English and Spanish, 24 hours a day, 7 days a week.

# Summary of Recommendations for Adult Immunization



| Vaccine name and route | For whom vaccination is recommended | Schedule for vaccine administration (any vaccine can be given with another) | Contraindications and precautions (mild illness is not a contraindication) |
|---|---|---|---|
| **Influenza**<br>Trivalent inactivated influenza vaccine (TIV)<br>*Give IM* | • Anyone wishing to reduce the likelihood of becoming ill with influenza.<br>• Persons age 50yrs and older.<br>• Persons with medical problems (e.g., heart disease, lung disease, diabetes, renal dysfunction, hemoglobinopathy, immunosuppression) and/or people living in chronic care facilities.<br>• Persons with any condition that compromises respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration (e.g., cognitive dysfunction, spinal cord injury, seizure disorder, or other neuromuscular disorder).<br>• Persons working or living with at-risk people.<br>• Women who will be pregnant during the influenza season (December–March).<br>• All healthcare personnel and other persons who provide direct care to at-risk people.<br>• Household contacts and out-of-home caregivers of children ages 0–59m.<br>• Travelers at risk for complications of influenza who go to areas where influenza activity exists or who may be among people from areas of the world where there is current influenza activity (e.g., on organized tours).<br>• Persons who provide essential community services.<br>• Students or other persons in institutional settings (e.g., dormitory residents). | • Given every year in the fall or winter.<br>• October and November are the usual months to give TIV.<br>• LAIV may be given as soon as it is available.<br>• Continue to give TIV and LAIV through the influenza season from December through March (including when influenza activity is present in the community) and at other times when the risk of influenza exists. | **Contraindication**<br>Previous anaphylactic reaction to this vaccine, to any of its components, or to eggs.<br>**Precautions**<br>• Moderate or severe acute illness.<br>• History of Guillain-Barré syndrome (GBS) within 6wks of previous TIV. |
| **Influenza**<br>Live attenuated influenza vaccine (LAIV)<br>*Give intranasally* | • Healthy, non-pregnant persons age 49yrs and younger who meet any of the criteria listed below.<br>- Working or living with at-risk people as listed in the section above.<br>- Healthcare personnel or other persons who provide direct care to at-risk people (except persons in close contact with severely immunosuppressed persons).<br>- Household contacts and out-of-home caregivers of children ages 0–59m.<br>- Travelers who may be among people from areas of the world where there is current influenza activity (e.g., on organized tours).<br>- Persons who provide essential community services.<br>- Students or other persons in institutional settings (e.g., dormitory residents).<br>- Persons who wish to reduce the likelihood of becoming ill with influenza. | | **Contraindications**<br>• Previous anaphylactic reaction to this vaccine, to any of its components, or to eggs.<br>• Pregnancy, asthma, reactive airway disease or other chronic disorder of the pulmonary or cardiovascular system; an underlying medical condition, including metabolic disease such as diabetes, renal dysfunction, and hemoglobinopathy; a known or suspected immune deficiency disease or receiving immunosuppressive therapy; history of GBS.<br>**Precaution**<br>Moderate or severe acute illness. |
| **Pneumococcal poly-saccharide** (PPV)<br>*Give IM or SC* | • Persons age 65yrs and older.<br>• Persons who have chronic illness or other risk factors, including chronic cardiac or pulmonary disease, chronic liver disease, alcoholism, diabetes, CSF leak, as well as people living in special environments or social settings (including Alaska Natives and certain American Indian populations). Those at highest risk of fatal pneumococcal infection are persons with anatomic asplenia, functional asplenia, or sickle cell disease; immunocompromised persons including those with HIV infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, or nephrotic syndrome; persons receiving immunosuppressive chemotherapy (including corticosteroids); those who received an organ or bone marrow transplant; and candidates for or recipients of cochlear implants. | • Routinely given as a one-time dose; administer if previous vaccination history is unknown.<br>• One-time revaccination is recommended 5yrs later for persons at highest risk of fatal pneumococcal infection or rapid antibody loss (e.g., renal disease) and for persons age 65yrs and older if the 1st dose was given prior to age 65 and 5yrs or more have elapsed since the previous dose. | **Contraindication**<br>Previous anaphylactic reaction to this vaccine or to any of its components.<br>**Precaution**<br>Moderate or severe acute illness. |

*This document was adapted from the recommendations of the Advisory Committee on Immunization Practices (ACIP). To obtain copies of these recommendations, call the CDC-INFO Contact Center at (800) 232-4636; visit CDC's website at www.cdc.gov/nip/publications/ACIP-list.htm; or visit the Immunization Action Coalition (IAC) website at www.immunize.org/acip. This table is revised periodically. Visit IAC's website at www.immunize.org/adultrules to make sure you have the most current version.

Technical content reviewed by the Centers for Disease Control and Prevention, May 2007.

www.immunize.org/catg.d/p2011b.pdf • Item #P2011 (5/07)

# Summary of Recommendations for Adult Immunization (continued)



| Vaccine name and route | For whom vaccination is recommended | Schedule for vaccine administration (any vaccine can be given with another) | Contraindications and precautions (mild illness is not a contraindication) |
|---|---|---|---|
| **Hepatitis B** (Hep B)<br>*Give IM*<br><br>Brands may be used interchangeably. | • All persons through age 18yrs.<br>• Any adult wishing to obtain immunity against hepatitis B virus infection.<br>• High-risk persons, including household contacts and sex partners of HBsAg-positive persons; injecting drug users; sexually active persons not in a long-term, mutually monogamous relationship; men who have sex with men; persons with HIV or a recently diagnosed STD; patients receiving hemodialysis and patients with renal disease that may result in dialysis; recipients of certain blood products; healthcare personnel and public safety workers who are exposed to blood; clients and staff of institutions for the developmentally disabled; inmates of long-term correctional facilities; and certain international travelers.<br>• Persons with chronic liver disease.<br>**Note:** Provide serologic screening for immigrants from endemic areas. If patient is chronically infected, assure appropriate disease management. Screen sex partners and household members; give Hep B at the same visit if not already vaccinated. | • Three doses are needed on a 0, 1, 6m schedule.<br>• Alternative timing options for vaccination include 0, 2, 4m and 0, 1, 4m.<br>• There must be 4wks between doses #1 and #2, and 8wks between doses #2 and #3. Overall, there must be at least 16wks between doses #1 and #3.<br>• **Schedule for those who have fallen behind:** If the series is delayed between doses, DO NOT start the series over. Continue from where you left off. | **Contraindication**<br>Previous anaphylactic reaction to this vaccine or to any of its components.<br>**Precaution**<br>Moderate or severe acute illness. |
| **Hepatitis A** (Hep A)<br>*Give IM*<br><br>Brands may be used interchangeably. | • Anyone wishing to obtain immunity to hepatitis A virus infection.<br>• Persons who travel or work anywhere except the U.S., Western Europe, New Zealand, Australia, Canada, and Japan.<br>• Persons with chronic liver disease, including persons with hepatitis B and C; injecting and non-injecting drug users; men who have sex with men; people with clotting-factor disorders; persons who work with hepatitis A virus in experimental lab settings (not routine medical laboratories); and food handlers when health authorities or private employers determine vaccination to be appropriate.<br>**Note:** Prevaccination testing is likely to be cost effective for persons older than age 40yrs, as well as for younger persons in certain groups with a high prevalence of hepatitis A virus infection. | For Twinrix® (hepatitis A and B combination vaccine [GSK]) for patients 18yrs and older only: three doses are needed on a 0, 1, 6m schedule. An accelerated schedule can also be used at 0, 7, 21–30d, and a booster at 12m.<br>• Two doses are needed.<br>• The minimum interval between doses #1 and #2 is 6m.<br>• If dose #2 is delayed, do not repeat dose #1. Just give dose #2. | **Contraindication**<br>Previous anaphylactic reaction to this vaccine or to any of its components.<br>**Precautions**<br>• Moderate or severe acute illness.<br>• Safety during pregnancy has not been determined, so benefits must be weighed against potential risk. |
| **Td, Tdap** (Tetanus, diphtheria, pertussis)<br>*Give IM* | • All adults who lack a history of a primary series consisting of at least 3 doses of tetanus- and diphtheria-toxoid-containing vaccine.<br>• A booster dose of tetanus- and diphtheria-toxoid-containing vaccine may be needed for wound management as early as 5yrs after receiving a previous dose, so consult ACIP recommendations.*<br>• Using tetanus toxoid (TT) instead of Td or Tdap is <u>not</u> recommended.<br>• In pregnancy, when indicated, give Td or Tdap in 2nd or 3rd trimester. If not administered during pregnancy, give Tdap in immediate postpartum period.<br>**For Tdap only:**<br>• All adults younger than age 65yrs who have not already received Tdap.<br>• Healthcare personnel who work in hospitals or ambulatory care settings and have direct patient contact and who have not received Tdap.<br>• Adults in contact with infants younger than age 12m (e.g., parents, grandparents younger than age 65yrs, childcare providers, healthcare personnel) who have not received a dose of Tdap should be prioritized for vaccination. | • For persons who are unvaccinated or behind, complete the primary series with Td (spaced at 0, 1–2m, 6–12m intervals). One dose of Tdap may be used for any dose if ages 19–64yrs.<br>• Give Td booster every 10yrs after the primary series has been completed. For adults ages 19–64yrs, a 1-time dose of Tdap is recommended to replace the next Td.<br>• Intervals of 2yrs or less between Td and Tdap may be used if needed.<br>**Note:** The two Tdap products are licensed for different age groups: Adacel™ (sanofi) for use in persons ages 11–64yrs and Boostrix® (GSK) for use in persons ages 10–18yrs. | **Contraindications**<br>• Previous anaphylactic reaction to this vaccine or to any of its components.<br>• For Tdap only, history of encephalopathy within 7 days following DTP/DTaP.<br>**Precautions**<br>• Moderate or severe acute illness.<br>• GBS within 6wks of receiving a previous dose of tetanus-toxoid-containing vaccine.<br>• Unstable neurologic condition.<br>• History of arthus reaction following a previous dose of tetanus- and/or diphtheria-toxoid-containing vaccine, including MCV4.<br>**Note:** Use of Td/Tdap is not contraindicated in pregnancy. Either vaccine may be given during trimester #2 or #3 at the provider's discretion. |
| **Polio** (IPV)<br>*Give IM or SC* | Not routinely recommended for persons age 18yrs and older.<br>**Note:** Adults living in the U.S. who never received or completed a primary series of polio vaccine need not be vaccinated unless they intend to travel to areas where exposure to wild-type virus is likely (i.e., India, Pakistan, Afghanistan, and certain countries in Africa). Previously vaccinated adults can receive one booster dose if traveling to polio endemic areas. | • Refer to ACIP recommendations* regarding unique situations, schedules, and dosing information. | **Contraindication**<br>Previous anaphylactic or neurologic reaction to this vaccine or to any of its components.<br>**Precautions**<br>• Moderate or severe acute illness.<br>• Pregnancy. |

# Summary of Recommendations for Adult Immunization (continued)



| Vaccine name and route | For whom vaccination is recommended | Schedule for vaccine administration (any vaccine can be given with another) | Contraindications and precautions (mild illness is not a contraindication) |
|---|---|---|---|
| **Varicella** (Var) (Chickenpox) *Give SC* | • All adults without evidence of immunity. **Note:** Evidence of immunity is defined as a history of two doses of varicella vaccine; born in the U.S. before 1980 (exception: healthcare personnel and pregnant women); a history of varicella disease or herpes zoster based on healthcare provider diagnosis; laboratory evidence of immunity; and/or laboratory confirmation of disease. | • Two doses are needed.<br>• Dose #2 is given 4–8wks after dose #1.<br>• If Var and either MMR, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart.<br>• If the second dose is delayed, do not repeat dose #1. Just give dose #2. | **Contraindications**<br>• Previous anaphylactic reaction to this vaccine or to any of its components.<br>• Pregnancy or possibility of pregnancy within 4wks.<br>• Persons immunocompromised because of malignancy and primary or acquired cellular immunodeficiency including HIV/AIDS. (See *MMWR* 1999, Vol. 48, No. RR-6.) **Note:** For those on high-dose immunosuppressive therapy, consult ACIP recommendations regarding delay time.*<br>**Precautions**<br>• If blood, plasma, and/or immune globulin (IG or VZIG) were given in past 11m, see ACIP statement *General Recommendations on Immunization** regarding time to wait before vaccinating.<br>• Moderate or severe acute illness. |
| **Meningococcal** Conjugate vaccine (MCV4) *Give IM*<br>Polysaccharide vaccine (MPSV4) *Give SC* | • College freshmen living in dormitories.<br>• Persons with anatomic or functional asplenia or with terminal complement component deficiencies.<br>• Persons who travel to or reside in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of Sub-Saharan Africa).<br>• Microbiologists routinely exposed to isolates of *N. meningitidis*. | • One dose is needed.<br>• If previous vaccine was MPSV4, revaccinate after 5yrs if risk continues.<br>• Revaccination after MCV4 is not recommended.<br>• MCV4 is preferred over MPSV4 for persons age 55yrs and younger, although MPSV4 is an acceptable alternative. | **Contraindication**<br>Previous anaphylactic or neurologic reaction to this vaccine or to any of its components, including diphtheria toxoid (for MCV4).<br>**Precautions**<br>• Moderate or severe acute illness.<br>• For MCV4 only, history of GBS. |
| **MMR** (Measles, mumps, rubella) *Give SC* | • Persons born in 1957 or later (especially those born outside the U.S.) should receive at least one dose of MMR if there is no serologic proof of immunity or documentation of a dose given on or after the first birthday.<br>• Persons in high-risk groups, such as healthcare personnel, students entering college and other post–high school educational institutions, and international travelers, should receive a total of two doses.<br>• Persons born before 1957 are usually considered immune, but proof of immunity (serology or vaccination) may be desirable for healthcare personnel.<br>• Women of childbearing age who do not have acceptable evidence of rubella immunity or vaccination. | • One or two doses are needed.<br>• If dose #2 is recommended, give it no sooner than 4wks after dose #1.<br>• If MMR and either Var, LAIV, and/or yellow fever vaccine are not given on the same day, space them at least 28d apart.<br>• If a pregnant woman is found to be rubella susceptible, administer MMR postpartum. | **Contraindications**<br>• Previous anaphylactic reaction to this vaccine or to any of its components.<br>• Pregnancy or possibility of pregnancy within 4wks.<br>• Persons immunocompromised because of cancer, leukemia, lymphoma, immunosuppressive drug therapy, including high-dose steroids or radiation therapy. **Note:** HIV positivity is NOT a contraindication to MMR except for those who are severely immunocompromised.<br>**Precautions**<br>• If blood, plasma, and/or immune globulin were given in past 11m, see ACIP statement *General Recommendations on Immunization** regarding time to wait before vaccinating.<br>• Moderate or severe acute illness.<br>• History of thrombocytopenia or thrombocytopenic purpura.<br>**Note:** If PPD (tuberculosis skin test) and MMR are both needed but not given on same day, delay PPD for 4–6wks after MMR. |
| **Human-papillomavirus** (HPV) *Give IM* | • All previously unvaccinated women through age 26yrs. | • Three doses are needed on a 0, 2, 6m schedule.<br>• The minimum interval between doses #1 and #2 is 4wks, and between #2 and #3 is 12wks. | **Contraindication**<br>Previous anaphylactic reaction to this vaccine or to any of its components.<br>**Precaution**<br>Data on vaccination in pregnancy are limited. Vaccination should be delayed until after completion of the pregnancy. |
| **Zoster (shingles)** (Zos) *Give SC* | ACIP has voted to recommend herpes zoster (shingles) vaccine for all persons age 60yrs and older who do not have contraindications. Provisional recommendations are online at www.cdc.gov/nip/recs/provisional_recs. | | |