



Clinical Guideline Adult Preventive (21 & Over)

	Clinical Indicator	Ages 21-39	Ages 40-49	Ages 50-64	Ages 65+
COUNSELING	Assessing tobacco use	Every visit	Every visit	Every visit	Every visit
	Advising smokers to quit	At least annually	At least annually	At least annually	At least annually
	Assess drug/alcohol use ¹	Annually	Annually	Annually	Annually
	Depression screening ²	Annually	Annually	Annually	Annually
	Assess STD risk	Annually	Annually	Annually	Annually
	Assessment of functional status	Annually	Annually	Annually	Annually
	Medication review	Annually	Annually	Annually	Annually
	Advance care planning	At least once	At least once	At least once	Annually
	Discussion of aspirin prophylaxis ³	High risk	If high risk: Men-annually Women-post menopausal	Annually if high risk	Annually if high risk
SCREENING	Screening history & exam	Every 2 years	Every 2 years	Annually	Annually
	Cervical cancer screening ⁴ (Pap)	At a minimum every three years, more frequently if in a high risk group	At a minimum every three years, more frequently if in a high risk group	At a minimum every three years, more frequently if in a high risk group	Women: high risk
	HPV ⁵	Women: ≥ 30 if indicated	Women: ≥ 30 if indicated	Women: ≥ 30 if indicated	Women high risk
	Mammogram ⁶		Women: every 2 years	Women: every 2 years	Women: every 2 years until the age of 74
	Chlamydia screening ⁷	Women: annually to age 25 & with Pregnancy	If high risk	If high risk	
	Discuss prostate cancer screening ⁸		Annually	Annually	Annually
	Colon cancer screening Fecal occult blood &/or			Annually	Annually
	Sigmoidoscopy or Colonoscopy			Every 5 years Every 10 years	Every 5 years Every 10 years
	Vision, Hearing				Every 5 years
	Lipid Profile ⁹	Men ≥ 21: every 5 years unless high risk	Men: every 5 years unless high risk Women ≥ 45: every 5 years unless high risk	Every 5 years unless high risk	If not checked previously
	Obesity screening (BMI) ¹⁰	Every visit	Every visit	Every visit	Every visit
	Domestic violence ¹¹	Annually	Annually	Annually	Annually
	Bone health ¹²			Women age 60 & older at risk	Women at risk

Gateway Health Plan[®] follows the Centers for Disease Control and Prevention, recommended Adult Immunization Schedule-United States, 2009.

Recommended Adult Immunization Schedule has been approved by ACIP, ACOG, ACP & AAFP.

Please see attachment.

Links: <http://www.cdc.gov/vaccines/recs/schedules/downloads/adult/2010/adult-schedule-11x17.pdf>
www.cdc.gov/mmwr/ January 15, 2010

¹ Use CAGE screening. **C**: “Have you ever felt you ought to Cut down on drinking?” **A**: “Have people Annoyed you by criticizing your drinking?” **G**: “Have you ever felt bad or Guilty about your drinking?” **E**: “Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (Eye opener)?”

² Screening questions are: “Over the past month have you felt down, depressed or hopeless” and “Over the past month have you felt little interest or pleasure in doing things.”

³ Aspirin prophylaxis high risk-diabetes, elevated cholesterol levels, low levels of HDL cholesterol, elevated blood pressure, family history and smoking.

⁴ Discontinuation of cervical cancer screening in older women is appropriate, provided women have had adequate recent screening with normal Pap results. Screening is recommended in older women who have not been previously screened, when information about previous screening is unavailable or when screening is unlikely to have been done in the past. Recommendations from various organizations differ in how often the Pap screen should be done. The general recommendation is to screen every 2-3 years after 3 years of being sexually active but not later than age 21.

⁵ Although the US preventive task force found insufficient evidence to recommend for or against screening, other organizations endorsed routine screening along with Paps for women age 30 and older.

⁶ There is controversy over how often and at what age the mammograms should be done. Recommendations from various agencies recommend starting at age 40, others age 50. Recommendations for frequency are every 1-2 years.

⁷ Chlamydia screening high risk – Prevalence is higher in the following populations: unmarried women, African –American race, prior history of STD, having new or multiple sex partners, having cervical ectopy using barrier contraceptives inconsistently, and partners having multiple partners who engage in high risk behavior.

⁸ US Preventive Task force recommends discussing the potential harms and benefits of PSA/DRE screening with patients younger than 75. National comprehensive Cancer Network recommends all men should be offered a baseline screen at age 40 and 45, and all men at age 50.

⁹ Lipid disorder high risk – diabetes, history of cardiovascular disease before age 50 in male relatives or age 60 in female relatives, history suggestive of familial hyperlipidemia, multiple coronary heart disease risk factors and people who have lipid levels close to those warranting treatment.

¹⁰ Assess BMI and waist circumference at every visit during which weight is measured. Use 5As: Ask if patient is ready to make a change. Advise in a clear, specific and tailored manner. Assess level of obesity and co morbidities. Assist by providing necessary tools and support. Arrange contact with other providers who can provide a team approach.

¹¹ At each visit ask: “Within the past year have you been hit, slapped, kicked or otherwise physically hurt by someone?” “Are you in a relationship with a person who physically hurts you?” “Has anyone forced you to have sexual activities that make you feel uncomfortable?”

¹² Osteoporosis – Routine screening begin at age 60 for women identified as high risk because of their weight or estrogen use. Routine screening women age 65 and older at increased risk for osteoporotic fractures, and spinal abnormalities.

Scientific Evidence Sources:

U.S. Preventive Services Task Force. Guide to Clinical Preventive Services. Washington, DC: Office of Disease Prevention and Health Promotion, U.S. Government Printing Office, 2009.

U.S. Preventive Services Task Force. Recommendations and Rationale: Screening for Depression (2002), Screening for Colorectal Cancer (2002), Screening for Breast Cancer (2009), Screening for Prostate Cancer, Behavioral Counseling in Primary Care to Promote Physical Activity, and Aspirin for the Primary Prevention of Cardiovascular Events. (2002), Screening for Cervical Cancer (2003), Screening for Obesity in Adults (2003), Osteoporosis Screening (2003) Screening for Family and Intimate Partner Violence (2004) Screening for Alcohol Misuse (April 2004)

American Cancer Society Guidelines for Breast Cancer Detection 2007

American Academy of Family Practice Physicians Panel on Obesity, October 7, 2005

American Academy of Family Physicians. Summary of Recommendations for Clinical Preventive Services, August 2007 Revision 6.4.

The Advisory Committee on Immunization Practices. Recommended Adult Immunization Schedule United States, 2009

National Osteoporosis Foundation :Clinician's Guide to Prevention and Treatment of Osteoporosis, 2008

American College of Obstetricians and Gynecologists: Cervical Cytology Screening, Clinical Bulletin No.109

Health Care Guideline: Preventive Services for Adults: Institute for Clinical Systems Improvement; October 2009

Recommended Adult Immunization Schedule UNITED STATES - 2010

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

Figure 1. Recommended adult immunization schedule, by vaccine and age group

VACCINE ▼	AGE GROUP ▶	19–26 years	27–49 years	50–59 years	60–64 years	≥65 years
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}		Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs				Td booster every 10 yrs
Human papillomavirus (HPV) ^{2,*}		3 doses (females)				
Varicella ^{3,*}		2 doses				
Zoster ⁴					1 dose	
Measles, mumps, rubella (MMR) ^{5,*}		1 or 2 doses		1 dose		
Influenza ^{6,*}		1 dose annually				
Pneumococcal (polysaccharide) ^{7,8}		1 or 2 doses				1 dose
Hepatitis A ^{9,*}		2 doses				
Hepatitis B ^{10,*}		3 doses				
Meningococcal ^{11,*}		1 or more doses				

*Covered by the Vaccine Injury Compensation Program.



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)



No recommendation

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 www.vaers.hhs.gov or by telephone, 800-822-7967.

Information on how to file a Vaccine Injury Compensation Program claim is available at 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, extent of available data, and contraindications for vaccination is also available at www.cdc.gov/vaccines 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.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

Figure 2. Vaccines that might be indicated for adults based on medical and other indications

INDICATION ▶ VACCINE ▼	Pregnancy	Immuno-compromising conditions (excluding human immunodeficiency virus (HIV)) ^{3-5,13}	HIV infection ^{3-5,12,13}		Diabetes, heart disease, chronic lung disease, chronic alcoholism	Asplenia ¹² (including elective splenectomy and persistent complement component deficiencies)	Chronic liver disease	Kidney failure, end-stage renal disease, receipt of hemodialysis	Health-care personnel		
			CD4+ T lymphocyte count <200 cells/μL	>200 cells/μL							
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}	Td	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 yrs									
Human papillomavirus (HPV) ^{2,*}		3 doses for females through age 26 yrs									
Varicella ^{3,*}	Contraindicated				2 doses						
Zoster ⁴	Contraindicated				1 dose						
Measles, mumps, rubella (MMR) ^{5,*}	Contraindicated				1 or 2 doses						
Influenza ^{6,*}					1 dose TIV annually						
Pneumococcal (polysaccharide) ^{7,8}					1 or 2 doses						
Hepatitis A ^{9,*}					2 doses						
Hepatitis B ^{10,*}					3 doses						
Meningococcal ^{11,*}					1 or more doses				1 dose TIV or LAIV annually		

*Covered by the Vaccine Injury Compensation Program.

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)
 No recommendation

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly indicated for adults ages 19 years and older, as of January 1, 2010. 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 (www.cdc.gov/vaccines/pubs/acip-list.htm).

The recommendations in this schedule were approved by the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP), the American Academy of Family Physicians (AAFP), the American College of Obstetricians and Gynecologists (ACOG), and the American College of Physicians (ACP).



DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION



Footnotes

Recommended Adult Immunization Schedule—UNITED STATES - 2010

For complete statements by the Advisory Committee on Immunization Practices (ACIP), visit www.cdc.gov/vaccines/pubs/ACIP-list.htm.

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

Tdap should replace a single dose of Td for adults aged 19 through 64 years who have not received a dose of Tdap previously.

Adults with uncertain or incomplete history of primary vaccination series with tetanus and diphtheria toxoid-containing vaccines should begin or complete a primary vaccination series. A primary series for adults is 3 doses of tetanus and diphtheria toxoid-containing vaccines; administer the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the second; Tdap can substitute for any one of the doses of Td in the 3-dose primary series. The booster dose of tetanus and diphtheria toxoid-containing vaccine should be administered to adults who have completed a primary series and if the last vaccination was received ≥ 10 years previously. Tdap or Td vaccine may be used, as indicated.

If a woman is pregnant and received the last Td vaccination ≥ 10 years previously, administer Td during the second or third trimester. If the woman received the last Td vaccination < 10 years previously, administer Tdap during the immediate postpartum period. A dose of Tdap is recommended for postpartum women, close contacts of infants aged < 12 months, and all health-care personnel with direct patient contact if they have not previously received Tdap. An interval as short as 2 years from the last Td is suggested; shorter intervals can be used. Td may be deferred during pregnancy and Tdap substituted in the immediate postpartum period, or Tdap can be administered instead of Td to a pregnant woman.

Consult the ACIP statement for recommendations for giving Td as prophylaxis in wound management.

2. Human papillomavirus (HPV) vaccination

HPV vaccination is recommended at age 11 or 12 years with catch-up vaccination at ages 13 through 26 years.

Ideally, vaccine should be administered before potential exposure to HPV through sexual activity; however, females who are sexually active should still be vaccinated consistent with age-based recommendations. Sexually active females who have not been infected with any of the four HPV vaccine types (types 6, 11, 16, 18 all of which HPV4 prevents) or any of the two HPV vaccine types (types 16 and 18 both of which HPV2 prevents) receive the full benefit of the vaccination. Vaccination is less beneficial for females who have already been infected with one or more of the HPV vaccine types. HPV4 or HPV2 can be administered to persons with a history of genital warts, abnormal Papanicolaou test, or positive HPV DNA test, because these conditions are not evidence of prior infection with all vaccine HPV types.

HPV4 may be administered to males aged 9 through 26 years to reduce their likelihood of acquiring genital warts. HPV4 would be most effective when administered before exposure to HPV through sexual contact.

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.

Although HPV vaccination is not specifically recommended for persons with the medical indications described in Figure 2, “Vaccines that might be indicated for adults based on medical and other indications,” it may be administered to these persons because the HPV vaccine is not a live-virus vaccine. However, the immune response and vaccine efficacy might be less for persons with the medical indications described in Figure 2 than in persons who do not have the medical indications described or who are immunocompetent. Health-care personnel are not at increased risk because of occupational exposure, and should be vaccinated consistent with age-based recommendations.

3. Varicella vaccination

All adults without evidence of immunity to varicella should receive 2 doses of single-antigen varicella vaccine if not previously vaccinated or the second dose if they have received only 1 dose, unless they have a medical contraindication. Special consideration should be given to those who 1) have close contact with persons at high risk for severe disease (e.g., health-care personnel and family contacts of persons with immunocompromising conditions) or 2) are at high risk for exposure or transmission (e.g., 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).

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 personnel 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 to a laboratory-confirmed case or evidence of laboratory confirmation, if it was performed at the time of acute disease); 4) history of herpes zoster based on diagnosis or verification of herpes zoster by a health-care provider; or 5) laboratory evidence of immunity or laboratory confirmation of disease.

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.

4. Herpes zoster vaccination

A single dose of zoster vaccine is recommended for adults aged ≥ 60 years regardless of whether they report a prior episode of herpes zoster. Persons with chronic medical conditions may be vaccinated unless their condition constitutes a contraindication.

5. Measles, mumps, rubella (MMR) vaccination

Adults born before 1957 generally are considered immune to measles and mumps.

Measles component: Adults born during or after 1957 should receive 1 or more doses of MMR vaccine unless they have 1) a medical contraindication; 2) documentation of vaccination with 1 or more doses of MMR vaccine; 3) laboratory evidence of immunity; or 4) documentation of physician-diagnosed measles.

A second dose of MMR vaccine, administered 4 weeks after the first dose, is recommended for adults who 1) have been recently exposed to measles or are in an outbreak setting; 2) have been vaccinated previously 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.

Mumps component: Adults born during or after 1957 should receive 1 dose of MMR vaccine unless they have 1) a medical contraindication; 2) documentation of vaccination with 1 or more doses of MMR vaccine; 3) laboratory evidence of immunity; or 4) documentation of physician-diagnosed mumps.

A second dose of MMR vaccine, administered 4 weeks after the first dose, is recommended for adults who 1) live in a community experiencing a mumps outbreak and are in an affected age group; 2) are students in postsecondary educational institutions; 3) work in a health-care facility; or 4) plan to travel internationally.

Rubella component: 1 dose of MMR vaccine is recommended for women who do not have documentation of rubella vaccination, or who lack laboratory evidence of immunity. For women of childbearing age, regardless of birth year, rubella immunity should be determined and women should be counseled regarding congenital rubella syndrome. 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 vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), respectively.

During outbreaks, health-care facilities should recommend that unvaccinated health-care personnel born before 1957, who lack laboratory evidence of measles, mumps, and/or rubella immunity or laboratory confirmation of disease, receive 2 doses of MMR vaccine during an outbreak of measles or mumps, and 1 dose during an outbreak of rubella.

Complete information about evidence of immunity is available at www.cdc.gov/vaccines/recs/provisional/default.htm.

6. Seasonal Influenza vaccination

Vaccinate all persons aged ≥ 50 years and any younger persons who would like to decrease their risk of getting influenza. Vaccinate persons aged 19 through 49 years with any of the following indications.

Medical: Chronic disorders of the cardiovascular or pulmonary systems, including asthma; chronic metabolic diseases, including diabetes mellitus; renal or hepatic dysfunction, hemoglobinopathies, or immunocompromising conditions (including immunocompromising conditions caused by medications or HIV); cognitive, neurologic or neuromuscular disorders; 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: All health-care personnel, including those employed by long-term care and assisted-living facilities, and caregivers of children aged < 5 years.

Other: Residents of nursing homes and other long-term care and assisted-living facilities; persons likely to transmit influenza to persons at high risk (e.g., in-home household contacts and caregivers of children aged < 5 years, persons aged ≥ 50 years, and persons of all ages with high-risk conditions).

Healthy, nonpregnant adults aged < 50 years without high-risk medical conditions who are not contacts of severely immunocompromised persons in special-care units may receive either intranasally administered live, attenuated influenza vaccine (FluMist) or inactivated vaccine. Other persons should receive the inactivated vaccine.

7. Pneumococcal polysaccharide (PPSV) vaccination

Vaccinate all persons with the following indications.

Medical: Chronic lung disease (including asthma); chronic cardiovascular diseases; diabetes mellitus; chronic liver diseases, cirrhosis; chronic alcoholism; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]); immunocompromising conditions including chronic renal failure or nephrotic syndrome; and cochlear implants and cerebrospinal fluid leaks. Vaccinate as close to HIV diagnosis as possible.

Other: Residents of nursing homes or long-term care facilities and persons who smoke cigarettes. Routine use of PPSV is not recommended for American Indians/Alaska Natives or persons aged < 65 years unless they have underlying medical conditions that are PPSV indications. However, public health authorities may consider recommending PPSV for American Indians/Alaska Natives and persons aged 50 through 64 years who are living in areas where the risk for invasive pneumococcal disease is increased.

8. Revaccination with PPSV

One-time revaccination after 5 years is recommended for persons with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); and for persons with immunocompromising conditions. For persons aged ≥ 65 years, one-time revaccination is recommended if they were vaccinated ≥ 5 years previously and were younger than aged < 65 years at the time of primary vaccination.

9. Hepatitis A vaccination

Vaccinate persons with any of the following indications and any person seeking protection from hepatitis A virus (HAV) infection.

Behavioral: Men who have sex with men and persons who use injection drugs.

Occupational: Persons working with HAV-infected primates or with HAV in a research laboratory setting.

Medical: Persons with chronic liver disease and persons who receive clotting factor concentrates.

Other: Persons traveling to or working in countries that have high or intermediate endemicity of hepatitis A (a list of countries is available at www.cdc.gov/travel/content/diseases.aspx).

Unvaccinated persons who anticipate close personal contact (e.g., household contact or regular babysitting) with an international adoptee from a country of high or intermediate endemicity during the first 60 days after arrival of the adoptee in the United States should consider vaccination. The first dose of the 2-dose hepatitis A vaccine series should be administered as soon as adoption is planned, ideally ≥ 2 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, administered on days 0, 7, and 21–30 followed by a booster dose at month 12 may be used.

10. Hepatitis B vaccination

Vaccinate persons with any of the following indications and any person seeking protection from hepatitis B virus (HBV) infection.

Behavioral: Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., 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.

Occupational: Health-care personnel and public-safety workers who are exposed to blood or other potentially infectious body fluids.

Medical: Persons with end-stage renal disease, including patients receiving hemodialysis; persons with HIV infection; and persons with chronic liver disease.

Other: 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 (a list of countries is available at www.cdc.gov/travel/content/diseases.aspx).

Hepatitis B vaccination is recommended for 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 or complete a 3-dose series of HepB to those persons not previously vaccinated. The second dose should be administered 1 month after the first dose; the third dose should be administered 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, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, administered on days 0, 7, and 21–30 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 $\mu\text{g/mL}$ (Recombivax HB) administered on a 3-dose schedule or 2 doses of 20 $\mu\text{g/mL}$ (Engerix-B) administered simultaneously on a 4-dose schedule at 0, 1, 2 and 6 months.

11. Meningococcal vaccination

Meningococcal vaccine should be administered to persons with the following indications.

Medical: Adults with anatomic or functional asplenia, or persistent complement component deficiencies.

Other: First-year college students living in dormitories; 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 (e.g., the “meningitis belt” of sub-Saharan Africa during the dry season [December through 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 (MCV4) is preferred for adults with any of the preceding indications who are aged ≤ 55 years; meningococcal polysaccharide vaccine (MPSV4) is preferred for adults aged ≥ 56 years. Revaccination with MCV4 after 5 years is recommended for adults previously vaccinated with MCV4 or MPSV4 who remain at increased risk for infection (e.g., adults with anatomic or functional asplenia). Persons whose only risk factor is living in on-campus housing are not recommended to receive an additional dose.

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

Hib vaccine generally is not recommended for persons aged ≥ 5 years. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in patients who have sickle cell disease, leukemia, or HIV infection or who have had a splenectomy. Administering 1 dose of Hib vaccine to these high-risk persons who have not previously received Hib vaccine is not contraindicated.

13. Immunocompromising conditions

Inactivated vaccines generally are acceptable (e.g., pneumococcal, meningococcal, 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 www.cdc.gov/vaccines/pubs/acip-list.htm.

Recommended Adult Immunization Schedule — United States, 2010

MMWRTM
QuickGuide

Weekly

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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 October 2009, ACIP approved the Adult Immunization Schedule for 2010, which includes several changes. A bivalent human papillomavirus vaccine (HPV2) was licensed for use in females in October 2009. ACIP recommends vaccination of females with either HPV2 or the quadrivalent human papillomavirus vaccine (HPV4). HPV4 was licensed for use in males in October 2009, and ACIP issued a permissive recommendation for use in males. Introductory sentences were added to the footnotes for measles, mumps, rubella, influenza, pneumococcal, hepatitis A, hepatitis B, and meningococcal vaccines. Clarifications were made to the footnotes for measles, mumps, rubella, influenza, hepatitis A, meningococcal, and *Haemophilus influenzae* type b vaccines, and schedule information was added to the hepatitis B vaccine footnote.

Additional information is available as follows: schedule (in English and Spanish) at <http://www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm>; adult vaccination at <http://www.cdc.gov/vaccines/default.htm>; ACIP statements for specific vaccines at <http://www.cdc.gov/vaccine/pubs/acip-list.htm>; and reporting adverse events 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 Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Physicians.

Suggested citation: Centers for Disease Control and Prevention. Recommended adult immunization schedule—United States, 2010. MMWR 2010;59(1).

Changes for 2010

Footnotes (Figures 1 and 2)

- The human papillomavirus (HPV) footnote (#2) includes language that a bivalent HPV vaccine (HPV2) has been licensed for use in females. Either HPV2 or the quadrivalent human papillomavirus vaccine (HPV4) can be used for vaccination of females aged 19 through 26 years. In addition, language has been added to indicate that ACIP issued a permissive recommendation for use of HPV4 in males.
- The measles, mumps, rubella (MMR) footnote (#5) has language added to clarify which adults born during or after 1957 do not need 1 or more doses of MMR vaccine for the measles and mumps components, and clarifies which women should receive a dose of MMR vaccine. Also, interval dosing information has been added to indicate when a second dose of MMR vaccine should be administered. Language has been added to highlight recommendations for vaccinating health-care personnel born before 1957 routinely and during outbreaks.
- The term “seasonal” has been added to the influenza footnote (#6).
- The hepatitis A footnote (#9) has language added to indicate that unvaccinated persons who anticipate close contact with an international adoptee should consider vaccination.
- The hepatitis B footnote (#10) has language added to include schedule information for the 3-dose hepatitis B vaccine.
- The meningococcal vaccine footnote (#11) clarifies which vaccine formulations are preferred for adults aged ≤ 55 years and ≥ 56 years, and which vaccine formulation can be used for revaccination. New examples have been added to demonstrate who should and should not be considered for revaccination.
- The selected conditions for *Haemophilus influenzae* type b (Hib) footnote (#13) clarifies which high-risk persons may receive 1 dose of Hib vaccine.

FIGURE 1. Recommended adult immunization schedule, by vaccine and age group — United States, 2010

VACCINE ▼	AGE GROUP ►	19–26 years	27–49 years	50–59 years	60–64 years	≥65 years
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}		Substitute one-time dose of Tdap for Td booster; then boost with Td every 10 years				Td booster every 10 years
Human papillomavirus ^{2,*}		3 doses (females)				
Varicella ^{3,*}		2 doses				
Zoster ⁴					1 dose	
Measles, mumps, rubella ^{5,*}		1 or 2 doses		1 dose		
Influenza ^{6,*}		1 dose annually				
Pneumococcal (polysaccharide) ^{7,8}		1 or 2 doses				1 dose
Hepatitis A ^{9,*}		2 doses				
Hepatitis B ^{10,*}		3 doses				
Meningococcal ^{11,*}		1 or more doses				

* Covered by the Vaccine Injury Compensation Program. 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., based on medical, occupational, lifestyle, or other indications) No recommendation

FIGURE 2. Vaccines that might be indicated for adults, based on medical and other indications — United States, 2010

VACCINE ▼	INDICATION ►	HIV infection ^{3-5,12,13} CD4+ T lymphocyte count		Diabetes, heart disease, chronic lung disease, chronic alcoholism	Asplenia ¹³ (including elective splenectomy and persistent complement component deficiencies)	Chronic liver disease	Kidney failure, end-stage renal disease, receipt of hemodialysis	Health-care personnel	
		<200 cells/ μ L	\geq 200 cells/ μ L						
Tetanus, diphtheria, pertussis (Td/Tdap) ^{1,*}	Pregnancy	Td Substitute one-time dose of Tdap for Td booster; then boost with Td every 10 years							
Human papillomavirus ^{2,*}		3 doses for females through age 26 years							
Varicella ^{3,*}		Contraindicated		2 doses					
Zoster ⁴		Contraindicated		1 dose					
Measles, mumps, rubella ^{5,*}		Contraindicated		1 or 2 doses					
Influenza ^{6,*}		1 dose TIV annually							1 dose TIV or LAIV annually
Pneumococcal (polysaccharide) ^{7,8}		1 or 2 doses							
Hepatitis A ^{9,*}		2 doses							
Hepatitis B ^{10,*}				3 doses					
Meningococcal ^{11,*}		1 or more doses							

* Covered by the Vaccine Injury Compensation Program. 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., based on medical, occupational, lifestyle, or other indications) No recommendation

NOTE: The above recommendations must be read along with the footnotes on pages Q3–Q4 of this schedule.

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

Tdap should replace a single dose of Td for adults aged 19–64 years who have not received a dose of Tdap previously.

Adults with uncertain or incomplete history of primary vaccination series with tetanus and diphtheria toxoid-containing vaccines should begin or complete a primary vaccination series. A primary series for adults is 3 doses of tetanus and diphtheria toxoid-containing vaccines; administer the first 2 doses at least 4 weeks apart and the third dose 6–12 months after the

second; Tdap can substitute for any one of the doses of Td in the 3-dose primary series. The booster dose of tetanus and diphtheria toxoid-containing vaccine should be administered to adults who have completed a primary series and if the last vaccination was received \geq 10 years previously. Tdap or Td vaccine may be used, as indicated.

If a woman is pregnant and received the last Td vaccination \geq 10 years previously, administer Td during the second or third trimester. If the woman received the last Td vaccination <10 years previously, administer Tdap

during the immediate postpartum period. A dose of Tdap is recommended for postpartum women, close contacts of infants aged <12 months, and all health-care personnel with direct patient contact if they have not previously received Tdap. An interval as short as 2 years from the last Td vaccination is suggested; shorter intervals can be used. Td may be deferred during pregnancy and Tdap substituted in the immediate postpartum period, or Tdap can be administered instead of Td to a pregnant woman.

Consult the ACIP statement for recommendations for giving Td as prophylaxis in wound management.

2. Human papillomavirus (HPV) vaccination

HPV vaccination is recommended at age 11 or 12 years with catch-up vaccination at ages 13 through 26 years.

Ideally, vaccine should be administered before potential exposure to HPV through sexual activity; however, females who are sexually active should still be vaccinated consistent with age-based recommendations. Sexually active females who have not been infected with any of the four HPV vaccine types (types 6, 11, 16, 18, all of which HPV4 prevents) or any of the two HPV vaccine types (types 16 and 18, both of which HPV2 prevents) receive the full benefit of the vaccination. Vaccination is less beneficial for females who have already been infected with one or more of the HPV vaccine types. HPV4 or HPV2 can be administered to persons with a history of genital warts, abnormal Papanicolaou test, or positive HPV DNA test, because these conditions are not evidence of prior infection with all vaccine HPV types.

HPV4 may be administered to males aged 9 through 26 years to reduce their likelihood of acquiring genital warts. HPV4 would be most effective when administered before exposure to HPV through sexual contact.

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.

Although HPV vaccination is not specifically recommended for persons with the medical indications described in Figure 2, “Vaccines that might be indicated for adults based on medical and other indications,” it may be administered to these persons because the HPV vaccine is not a live-virus vaccine. However, the immune response and vaccine efficacy might be less for persons with the medical indications described in Figure 2 than in persons who do not have the medical indications described or who are immunocompetent. Health-care personnel are not at increased risk because of occupational exposure and should be vaccinated consistent with age-based recommendations.

3. Varicella vaccination

All adults without evidence of immunity to varicella should receive 2 doses of single-antigen varicella vaccine if not previously vaccinated or the second dose if they have received only 1 dose, unless they have a medical contraindication. Special consideration should be given to those who 1) have close contact with persons at high risk for severe disease (e.g., health-care personnel and family contacts of persons with immunocompromising conditions) or 2) are at high risk for exposure or transmission (e.g., 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).

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 personnel 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 having an atypical case, a mild case, or both, health-care providers should seek either an epidemiologic link with a typical varicella case or to a laboratory-confirmed case or evidence of laboratory confirmation, if it was performed at the time of acute disease); 4) history of herpes zoster based on diagnosis or verification of herpes zoster by a health-care provider; or 5) laboratory evidence of immunity or laboratory confirmation of disease.

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.

4. Herpes zoster vaccination

A single dose of zoster vaccine is recommended for adults aged ≥60 years regardless of whether they report a prior episode of herpes zoster. Persons with chronic medical conditions may be vaccinated unless their condition constitutes a contraindication.

5. Measles, mumps, rubella (MMR) vaccination

Adults born before 1957 generally are considered immune to measles and mumps.

Measles component: Adults born during or after 1957 should receive 1 or more doses of MMR vaccine unless they have 1) a medical contraindication; 2) documentation of vaccination with 1 or more doses of MMR vaccine; 3) laboratory evidence of immunity; or 4) documentation of physician-diagnosed measles.

A second dose of MMR vaccine, administered 4 weeks after the first dose, is recommended for adults who 1) have been recently exposed to measles or are in an outbreak setting; 2) have been vaccinated previously 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.

Mumps component: Adults born during or after 1957 should receive 1 dose of MMR vaccine unless they have 1) a medical contraindication; 2) documentation of vaccination with 1 or more doses of MMR vaccine; 3) laboratory evidence of immunity; or 4) documentation of physician-diagnosed mumps.

A second dose of MMR vaccine, administered 4 weeks after the first dose, is recommended for adults who 1) live in a community experiencing a mumps outbreak and are in an affected age group; 2) are students in postsecondary educational institutions; 3) work in a health-care facility; or 4) plan to travel internationally.

Rubella component: 1 dose of MMR vaccine is recommended for women who do not have documentation of rubella vaccination, or who lack laboratory evidence of immunity. For women of childbearing age, regardless of birth year, rubella immunity should be determined, and women should be counseled regarding congenital rubella syndrome. 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 vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), respectively.

During outbreaks, health-care facilities should recommend that unvaccinated health-care personnel born before 1957, who lack laboratory evidence of measles, mumps, and/or rubella immunity or laboratory confirmation of disease, receive 2 doses of MMR vaccine during an outbreak of measles or mumps, and 1 dose during an outbreak of rubella.

Complete information about evidence of immunity is available at <http://www.cdc.gov/vaccines/recs/provisional/default.htm>.

6. Seasonal influenza vaccination

Vaccinate all persons aged ≥50 years and any younger persons who would like to decrease their risk for influenza. Vaccinate persons aged 19 through 49 years with any of the following indications.

Medical: Chronic disorders of the cardiovascular or pulmonary systems, including asthma; chronic metabolic diseases (including diabetes mellitus); renal or hepatic dysfunction, hemoglobinopathies, or immunocompromising conditions (including immunocompromising conditions caused by medications or HIV); cognitive, neurologic, or neuromuscular disorders; 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: All health-care personnel, including those employed by long-term care and assisted-living facilities, and caregivers of children aged <5 years.

Other: Residents of nursing homes and other long-term care and assisted-living facilities; persons likely to transmit influenza to persons at high risk (e.g., in-home household contacts and caregivers of children aged <5 years, persons aged ≥50 years, and persons of all ages with high-risk conditions).

Healthy, nonpregnant adults aged <50 years without high-risk medical conditions who are not contacts of severely immunocompromised persons in special-care units may receive either intranasally administered live, attenuated influenza vaccine (FluMist) or inactivated vaccine. Other persons should receive the inactivated vaccine.

7. Pneumococcal polysaccharide (PPSV) vaccination

Vaccinate all persons with the following indications.

Medical: Chronic lung disease (including asthma); chronic cardiovascular diseases; diabetes mellitus; chronic liver diseases, cirrhosis; chronic alcoholism; functional or anatomic asplenia (e.g., sickle cell disease or

splenectomy [if elective splenectomy is planned, vaccinate at least 2 weeks before surgery]; immunocompromising conditions (including chronic renal failure or nephrotic syndrome); and cochlear implants and cerebrospinal fluid leaks. Vaccinate as close to HIV diagnosis as possible.

Other: Residents of nursing homes or long-term care facilities and persons who smoke cigarettes. Routine use of PPSV is not recommended for American Indians/Alaska Natives or persons aged <65 years unless they have underlying medical conditions that are PPSV indications. However, public health authorities may consider recommending PPSV for American Indians/Alaska Natives and persons aged 50 through 64 years who are living in areas where the risk for invasive pneumococcal disease is increased.

8. Revaccination with PPSV

One-time revaccination after 5 years is recommended for persons with chronic renal failure or nephrotic syndrome; functional or anatomic asplenia (e.g., sickle cell disease or splenectomy); and for persons with immunocompromising conditions. For persons aged ≥ 65 years, one-time revaccination is recommended if they were vaccinated ≥ 5 years previously and were aged <65 years at the time of primary vaccination.

9. Hepatitis A vaccination

Vaccinate persons with any of the following indications and any person seeking protection from hepatitis A virus (HAV) infection.

Behavioral: Men who have sex with men and persons who use injection drugs.

Occupational: Persons working with HAV-infected primates or with HAV in a research laboratory setting.

Medical: Persons with chronic liver disease and persons who receive clotting factor concentrates.

Other: 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/content/diseases.aspx>).

Unvaccinated persons who anticipate close personal contact (e.g., household contact or regular babysitting) with an international adoptee from a country of high or intermediate endemicity during the first 60 days after arrival of the adoptee in the United States should consider vaccination. The first dose of the 2-dose hepatitis A vaccine series should be administered as soon as adoption is planned, ideally ≥ 2 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, administered on days 0, 7, and 21–30 followed by a booster dose at month 12 may be used.

10. Hepatitis B vaccination

Vaccinate persons with any of the following indications and any person seeking protection from hepatitis B virus (HBV) infection.

Behavioral: Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., 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.

Occupational: Health-care personnel and public-safety workers who are exposed to blood or other potentially infectious body fluids.

Medical: Persons with end-stage renal disease, including patients receiving hemodialysis; persons with HIV infection; and persons with chronic liver disease.

Other: 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 (a list of countries is available at <http://www.cdc.gov/travel/content/diseases.aspx>).

Hepatitis B vaccination is recommended for 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 day-care facilities for persons with developmental disabilities.

Administer or complete a 3-dose series of hepatitis B vaccine to those persons not previously vaccinated. The second dose should be administered 1 month after the first dose; the third dose should be administered 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, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, administered on days 0, 7, and 21–30 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 $\mu\text{g}/\text{mL}$ (Recombivax HB) administered on a 3-dose schedule or 2 doses of 20 $\mu\text{g}/\text{mL}$ (Engerix-B) administered simultaneously on a 4-dose schedule at 0, 1, 2, and 6 months.

11. Meningococcal vaccination

Meningococcal vaccine should be administered to persons with the following indications.

Medical: Adults with anatomic or functional asplenia, or persistent complement component deficiencies.

Other: First-year college students living in dormitories; 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 (e.g., the “meningitis belt” of sub-Saharan Africa during the dry season [December through 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 (MCV4) is preferred for adults with any of the preceding indications who are aged ≤ 55 years; meningococcal polysaccharide vaccine (MPSV4) is preferred for adults aged ≥ 56 years. Revaccination with MCV4 after 5 years is recommended for adults previously vaccinated with MCV4 or MPSV4 who remain at increased risk for infection (e.g., adults with anatomic or functional asplenia). Persons whose only risk factor is living in on-campus housing are not recommended to receive an additional dose.

12. Immunocompromising conditions

Inactivated vaccines generally are acceptable (e.g., pneumococcal, meningococcal, 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>.

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

Hib vaccine generally is not recommended for persons aged ≥ 5 years. No efficacy data are available on which to base a recommendation concerning use of Hib vaccine for older children and adults. However, studies suggest good immunogenicity in patients who have sickle cell disease, leukemia, or HIV infection or who have had a splenectomy. Administering 1 dose of Hib vaccine to these high-risk persons who have not previously received Hib vaccine is not contraindicated.

These schedules indicate the recommended age groups and medical indications for which administration of currently licensed vaccines is commonly indicated for adults aged ≥ 19 years, as of January 1, 2009. 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 that are used primarily for travelers or are issued during the year, consult the manufacturers' package inserts and the complete statements from the Advisory Committee on Immunization Practices (ACIP) (<http://www.cdc.gov/vaccines/pubs/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, extent of available data, and contraindications for vaccination is available at <http://www.cdc.gov/vaccines> 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.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

The recommendations in this schedule were approved by ACIP, the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Physicians.