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Pocket Guide to Selected Preventive Services for Adults

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Council of Young Physicians

ACP

AMERICAN COLLEGE OF PHYSICIANS
INTERNAL MEDICINE | *Doctors for Adults*

The Board of Regents established the Council of Young Physicians (CYP) in June 2005 to enhance the professional development and quality of life for young physicians, foster their involvement in College activities, and ensure their needs are being met. A Young Physician is defined as a physician member of ACP who is within sixteen (16) years of graduating medical school and who is not a Medical Student or Associate Member of ACP. The intent of this definition is to identify Members who are early in their professional development, such as those Members who are younger than 40 years of age and those Members who have entered the medical profession by a nontraditional professional development pathway. Additionally, the Council will work to ensure that the views of Young Physicians are reflected in all College deliberations and discussions.

The first Pocket Guide to Selected Preventive Services for Adults was compiled in 2001-02, as a collaboration between the Council's predecessor, the Young Physicians Subcommittee, and the ACP's Clinical Programs Department. Special thanks to Bruno R. Granwehr, MD, MS and Amir Qasem, MD, PhD, for their review of this edition of the guide.

For more about the College, we encourage you to visit the College's Web site: www.acponline.org. Click on *site map* for an alphabetically arranged list of topics.

2006-07 Council of Young Physicians

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2007 ACP Pocket Guide to Selected Preventive Services for Adults
Clinical Preventive Services for Normal-Risk Adults

The United States Preventive Services Task Force was used to develop this guide.
 Refer to <http://www.ahrq.gov/clinic/uspstfix.htm> for additional information.

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
Abdominal Aortic Aneurysm screening	Age 65 to 75 (Men; current or former smokers)	Yes (2005)	One-time	USPSTF recommends one-time screening for AAA by abdominal ultrasound in men 65-75 who have ever smoked.	B
				The USPSTF makes no recommendation for or against screening for AAA in men aged 65 to 75 who have never smoked.	C
				The USPSTF recommends against routine screening for AAA in women, regardless of age.	D
Asymptomatic Bacteriuria screening	All pregnant women at 12-16 weeks gestation	Yes (2004)	Optimum frequency uncertain	USPSTF <u>strongly recommends</u> screening all pregnant women for asymptomatic bacteriuria using <u>urine culture</u> (rather than urinalysis) at 12-16 weeks gestation as this significantly reduces symptomatic UTIs, low birth weight and preterm delivery.	A
				USPSTF recommends <u>against</u> routine screening of men and nonpregnant women for asymptomatic bacteriuria.	D

Clinical Preventive Services for Normal-Risk Adults *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
Blood Pressure	>18 (all)	Yes (1996)	2 years	The U.S. Preventive Services Task Force (USPSTF) strongly recommends that clinicians screen adults aged 18 and older for high blood pressure. More frequent testing recommended if initial BP \geq 130/87. (see page 29 for JNC VII Guidelines)	A I
Breast cancer screening	>40 (women)	Yes (2002)	1-2 years	The USPSTF recommends screening mammography, with or without clinical breast examination (CBE), every 1-2 years for women aged 40 and older. The USPSTF concludes that: The evidence is insufficient to recommend for or against routine CBE alone to screen for breast cancer. The evidence is insufficient to recommend for or against teaching or performing routine breast self-examination (BSE).	B I

Cervical Cancer Screening	≥ 18 or first sexual intercourse (women)	Yes (2003)	Variable	<p>The U.S. Preventive Services Task Force (USPSTF) strongly recommends screening for cervical cancer in women who have been sexually active and have a cervix.</p> <p>The USPSTF recommends:</p> <p>Against routinely screening women older than age 65 for cervical cancer if they have had adequate recent screening with normal Pap smears and are not otherwise at high risk for cervical cancer.</p> <p>Against routine Pap smear screening in women who have had a total hysterectomy for benign disease.</p> <p>The USPSTF concludes that: The evidence is insufficient to recommend for or against the routine use of new technologies to screen for cervical cancer.</p> <p>The evidence is insufficient to recommend for or against the routine use of human papilloma virus (HPV) testing as a primary screening test for cervical cancer.</p>	<p>A</p> <p>D</p> <p>I</p>
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Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
Cervical Cancer Screening <i>(continued)</i>	≥ 18 or first sexual intercourse (women)	Yes (2003)	Variable	Pap smear beginning within 3 years of onset of sexual activity or age 21 (whichever comes first) and continuing every 3 years, and more frequently in high-risk patients (prior cervical or vaginal cancer, history of STDs, intercourse < age 16, 5+ sexual partners, and if mother took DES during pregnancy). Most organizations in the U.S. recommend that annual Pap smears be performed until a specified number (usually 2 or 3) are cytologically normal before lengthening the screening interval. Pelvic exams independent of Pap smears are of uncertain efficacy in reducing mortality in gynecological cancers.	
Chlamydia	≤ 25 (women)	Yes (2001)	Variable	The USPSTF strongly recommends screening sexually active women and other asymptomatic women at increased risk for infection ≤ 25 and recommended for pregnant women ≤ 25. Asymptomatic women at increased risk for infection include—unmarried, African-American race, history of STDs, erratic use of barrier contraceptives, cervical ectopy, new/multiple sexual partners, or in high prevalence areas.	A

Colorectal Cancer Screening	≥ 50	Yes (2002)	Yearly	<p><u>Average risk individuals</u> (endorsed by USPSTF and American College of Gastroenterology (ACG))</p> <p>Screening strategies</p> <p>Colonoscopy every 10 yrs (<u>preferred</u> as primary strategy by ACG and offered as alternative by USPSTF).</p> <p>Flexible sigmoidoscopy every 5 years <u>along with</u> annual fecal occult blood testing (endorsed by USPSTF and offered as secondary strategy by ACG).</p> <p>Double contrast barium enema every 5-10 years (offered as an alternative <u>along with</u> fecal occult blood testing by ACG and as alternative by USPSTF).</p> <p><u>High risk individuals</u> (Family history of colorectal cancer)</p> <ol style="list-style-type: none"> If first degree relative >60 years of age, begin screening at age 40 and evaluate with colonoscopy every 10 years (ACG endorsed). If first degree relative <60 years of age, begin screening at age 40 OR 10 yrs younger than age of youngest affected relative whichever is first (ACG endorsed). <p>Patients with family history of inflammatory bowel disease and personal hx of polyps are surveillance patients and not included in the screening recommendations.</p>	A
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Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
Depression	All	Yes (2002)	Variable	<p>USPSTF recommends screening adults for depression in clinic practices that have systems in place to assure accurate diagnosis, effective treatment and follow-up.</p> <p>Asking two simple questions about mood and anhedonia (“Over the past two weeks, have you felt down, depressed or hopeless?” and “Over the past two weeks, have you felt little interest or pleasure in doing things?”) may be as effective as using longer instruments. The optimal interval for screening is unknown. Recurrent screening may be most productive in patients with a history of depression, unexplained somatic symptoms, comorbid psychosocial conditions (panic disorder or generalized anxiety), substance abuse or chronic pain.</p>	B
Diabetes		No (2003)		<p>The USPSTF concludes that the evidence is insufficient to recommend for or against routinely screening impaired glucose tolerance, or impaired fasting glucose in asymptomatic adults.</p> <p>USPSTF recommends screening for type 2 diabetes in adults with hypertension or hyperlipidemia.</p>	I B

Gonorrhea	Variable (women)	Yes (2005)	Variable	USPSTF recommends clinicians screen all sexually active women, including pregnant women, for gonorrhea infection if they are at increased risk for infection (i.e. if they are young or have other individual or population risk factors— history of prior gonorrhea infection, other STDs, new or multiple sexual partners, inconsistent condom use, sex work and drug use).	B
Hepatitis B Virus (HBV) screening	Variable (pregnant women)	Yes (2004)		USPSTF strongly recommends screening for hepatitis B virus (HBV) infection in pregnant women at their first prenatal visit. The USPSTF recommends against routinely screening the general asymptomatic population for chronic hepatitis B infection.	A D
Height and Weight	All	Yes	Periodically (2003)	Recommend calculating BMI: [weight (kg)/height (m) ² (squared)] or [weight (lb) / height (in) / height (in)] x 703 (Adult BMI Charts can be accessed at www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl.htm)	

Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
HIV	Variable	Yes (2005)	Variable	<p>The USPSTF recommends that clinicians screen all pregnant women for HIV.</p> <p>The U.S. Preventive Services Task Force (USPSTF) strongly recommends that clinicians screen for human immunodeficiency virus (HIV) all adolescents and adults at increased risk for HIV infection.</p> <p>Those at increased risk (as determined by prevalence rates) include: men and women having unprotected sex with multiple partners; past or present injection drug users; men and women who exchange sex for money or drugs or have sex partners who do; individuals whose past or present sex partners were HIV-infected, bisexual, or injection drug users; persons being treated for sexually transmitted diseases (STDs); persons with a history of blood transfusion between 1978 and 1985.</p> <p>Those who are seen in high-risk/high-prevalence settings (e.g., correctional facilities, homeless shelters, TB clinics) may also benefit from screening.</p>	<p>A</p> <p>A</p>

Lipid Disorders Screening	≥ 35 (men) ≥ 45 (women)	Yes (2001)	Variable	<p>The U.S. Preventive Services Task Force (USPSTF) strongly recommends that clinicians routinely screen men aged 35 years and older and women aged 45 years and older for lipid disorders and treat abnormal lipids in people who are at increased risk of coronary heart disease.</p> <p>Total and HDL-C can be measured on nonfasting or fasting samples. Abnormal results should be confirmed by repeated sample on a separate occasion and the average of both results should be used for risk assessment.</p> <p>USPSTF recommends routine screening of younger adults (men aged 20-35 and women 20-45) if they have risk factors for CAD (diabetes, family history of cardiovascular disease before age 50 in male relatives or age 60 in female relatives, family history suggestive of familial hyperlipidemia, multiple CHD risk factors (tobacco use, hypertension).</p> <p>An age to stop screening has not been established.</p>	<p>A</p> <p>B</p>
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Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
Osteoporosis screening	Variable (AACE)	Yes (2002)	Variable (AACE)	The U.S. Preventive Services Task Force (USPSTF) recommends that women aged 65 and older be screened routinely for osteoporosis.	B
				The USPSTF recommends that routine screening begin at age 60 for women at increased risk for osteoporotic fractures. (exact risk factors in those less than 60 yo difficult to specify based on evidence. But low body weight < 70 kg is the single best predictor of low bone mineral density). Recommended by American Association of Clinical Endocrinologists for women in estrogen-deficient states and patients with radiographic osteopenia, hyperparathyroidism, vertebral fractures, or on high-dose glucocorticoids and/or osteoporosis medication.	B
Prostate Cancer Screening	USPSTF ≥ 50 (men) (ACS)	No (2002)	Yearly	The U.S. Preventive Services Task Force (USPSTF) concludes that the evidence is insufficient to recommend for or against routine screening for prostate cancer using prostate specific antigen (PSA) testing or digital rectal examination (DRE).	I

Prostate Cancer Screening <i>(continued)</i>	USPSTF ≥ 50 (men) (ACS)	No (2002)	Yearly	Recommended yearly by ACS. Long-term mortality benefits of PSA and DRE uncertain; testing and frequency at discretion of physician and patient. Consider screening age ≥ 40 in African Americans due to higher prevalence. ACP does not endorse PSA or DRE for routine prostate cancer screening.	
Rubella	Childbearing age (women)	Update in Progress	Once	Given the availability of new evidence, the USPSTF has decided to update its 1996 recommendation. The 1996 recommendation may contain information that is out of date.	
Syphilis screening	Variable	Yes (2004)	Variable	Strongly recommended for all pregnant women at 1 st prenatal visit, and those at increased risk for syphilis infection (homosexuals, people who exchange sex for drugs, high-risk sexual behavior, and those in adult correctional facilities).	A
Tuberculosis screening	All	Update in Progress	Variable	The USPSTF recognizes the importance of targeted screening for tuberculosis. However, the USPSTF does not wish to duplicate the work of the Centers for Disease Control and Prevention (CDC) in this area and will not update its 1996 recommendations.	

Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
Vision and hearing assessment	≥ 65	Update in Progress	Periodically	Given the availability of new evidence, the USPSTF has decided to update its 1996 recommendation. This work is currently in progress. The 1996 recommendation may contain information that is out of date.	
CHEMOPROPHYLAXIS					
Aspirin	Variable	Yes (2002)	Reasonable option – every 5 years in middle-age and older people when other cardiovascular factors are detected	USPSTF strongly recommends clinicians discuss aspirin chemoprevention with adults who are at increased risk for coronary artery disease (CHD). Discussions with patients should address both potential benefits (prevention of MI) and harms (GI and intracranial bleeding) of aspirin therapy.	A

Aspirin (continued)	Variable	Yes (2002)	Reasonable option – every 5 years in middle-age and older people when other cardiovascular factors are detected	Balance of benefits and harms is most favorable in patients at high risk of CHD (5-year risk of CAD $\geq 3\%$) but is also influenced by patient preferences. To calculate risk, go to: healthlink.mcw.edu/article/923521437.html . Optimum dose of aspirin for chemoprevention is not known.	A
Folic Acid	Childbearing (Female)	Update in Progress	Daily	0.4 mg folic acid/day recommended for women capable of pregnancy continuing through first trimester to prevent neural tube defects. 4mg/day for women with previous pregnancy with neural tube defect.	B
Hormone Replacement Therapy	All Postmenopausal females	No (2005)		USPSTF recommends against the routine use of estrogen and progestin for the prevention of chronic conditions in postmenopausal women (such as heart disease or osteoporosis). USPSTF recommends against the routine use of unopposed estrogen for prevention of chronic conditions in postmenopausal women who have had a hysterectomy.	D D

Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
COUNSELING					
Alcohol Misuse Screening	All	Yes (2004)	Periodically	<p>USPSTF recommends screening and behavioral counseling interventions to reduce alcohol misuse by adults, including pregnant women, in primary care. See weblink for screening tools: http://www.niaaa.nih.gov/.</p> <p>Alcohol misuse includes “risky/hazardous” and “harmful” drinking that places individuals at risk for future problems. “Risky/Hazardous” drinking defined in US >7 drinks/week or > 3 drinks/occasion for women, and > 14 drinks/week or > 4 drinks/occasion for men. “Harmful” drinking – currently experiencing physical, social or psychological harm from alcohol use but do not meet criteria for dependence.</p>	B
Contraception	All	Yes (1996)	Periodically		
Fat, Cholesterol Intake, and Caloric Balance	All	Yes (1996)	Periodically	Limitation of dietary fat, especially saturated fats.	

Healthy Diet	Variable	Yes (2003)	Periodically	<p>USPSTF concludes that the evidence is insufficient to recommend for or against routine behavioral counseling to promote a healthy diet in unselected patients in primary care settings.</p> <p>USPSTF recommends intensive behavioral dietary counseling for adult patients with hyperlipidemia and other known risk factors for cardiovascular and diet-related chronic diseases. Intensive counseling can be done by primary care clinicians, or referral to other specialists such as nutritionists or dietitians.</p>	I B
Injury Prevention (motor vehicle, household)	All	Update in Progress	Periodically	Use of seatbelts, child safety seats, helmets when riding motorcycles and bicycles.	
Obesity	All	Yes (2003)	Periodically	USPSTF recommends screening all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss for OBESE (BMI \geq 30) adults.	B

Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	USPSTF Endorsed	Recommended Frequency	Comments	USPSTF Grade
Obesity <i>(continued)</i>	All	Yes (2003)	Periodically	<p>USPSTF defined intensity of counseling by frequency of the intervention. High-intensity intervention is more than one person-to-person (individual or group) session per month for at least first three months of the intervention. Advisable to refer obese patients to programs which offer intensive counseling and behavioral interventions for optimal weight loss.</p> <p>The USPSTF concludes that the evidence is insufficient to recommend for or against the use of counseling of any intensity and behavioral interventions to promote sustained weight loss in overweight adults.</p>	I
Regular Physical Activity	All	Yes (2002)	Periodically	The USPSTF concludes that the evidence is insufficient to recommend for or against behavioral counseling in primary care settings to promote physical activity.	I
STD Prevention	All	Update in Progress	Periodically		

Tobacco cessation	All tobacco users	Yes (2003)	Periodically	USPSTF strongly recommends that clinicians:	A
				Screen ALL adults for tobacco use and provide tobacco cessation interventions for those who use tobacco products.	
				Screen ALL pregnant women for tobacco use and provide augmented pregnancy-tailored counseling to those who smoke.	A
				USPSTF concluded that there is insufficient evidence to recommend for or against routine screening for tobacco use or interventions to prevent and treat tobacco use and dependence among children or adolescents.	I

Source: <http://www.ahrq.gov/clinic/uspstfix.htm>


The U.S. Preventive Services Task Force (USPSTF) grades its recommendations based on the strength of evidence and magnitude of net benefit (benefits minus harms).


- A. The USPSTF strongly recommends that clinicians provide [the service] to eligible patients. *The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.*
- B. The USPSTF recommends that clinicians provide [the service] to eligible patients. *The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.*
- C. The USPSTF makes no recommendation for or against routine provision of [the service]. *The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.*
- D. The USPSTF recommends against routinely providing [the service] to asymptomatic patients. *The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.*
- I. The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. *Evidence that [the service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.*

Recommended Adult Immunization Schedule, United States, 2006–2007 by Age Group

Age Group ► Vaccine ▼	19-49 years	50-64 years	65 Years and Older
Tetanus-diphtheria, pertussis (Td/Tdap)* ¹	1 dose Td booster every 10 years		
	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 weeks)	2 doses (0, 4-8 weeks for 50-64)	
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 months, or 0, 6-18 months)	
Hepatitis B ^{*9}	3 doses (0, 1-2, 4-6 months)	
Meningococcal (polysaccharide) 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. For information on how to file a claim call 800-338-2382 or visit www.hrsa.gov/osp/vicp.

Vaccine Adverse Event Reporting System (VAERS)-1-800-822-7967 or www.vaers.hhs.gov.

National Immunization Hotline- 1-800-232-2522 (1-800-232-0233 -Spanish) or www.cdc.gov/nip/.


Approved by the Advisory Committee on Immunization Practices (ACIP), the American College of Obstetrics and Gynecologists (ACOG), and the American Academy of Family Physicians (AAFP).


NOTE: These recommendations must be read along with the footnotes, which can be found on pp 22-27.


Recommended Adult Immunization Schedule, United States, 2006-2007 by vaccine, medical and other indications

Vaccine ► Medical Conditions ▼	Tetanus, diphtheria, pertussis (Td/Tdap)* ¹	Human papillo- mavirus (HPV)* ²	Measles, Mumps, Rubella (MMR)* ³	Vari- cella* ⁴	Influ- enza* ⁵	Pneumo- coccal (polysa- ccharide) ^{6,7}	Hepati- tis A* ⁸	Hepati- tis B* ⁹	Men- ingo- coccal ¹⁰
Pregnancy	1-dose Td booster every 10 yrs.				1 dose annually	1-2 doses	2 doses (0, 6-12, mos. or 0, 6-18 mos)	3 doses (0, 1-2, 4-6 mos)	1 dose
Congenital immunodeficien- cy, leukemia ¹¹ , lymphoma, generalized malignancy, cerebrospinal fluid leaks; therapy with alkylating agents, antimetabolites, radiation or high- dose long-term corticosteroids	S u b s t i t u t e I d o s e o f T d a p f o r T d	3-doses for women through age 26 years (0,2, 6, mos)				1-2 doses			
			1 or 2 doses	2 doses (0, 4-8 wks)					
Diabetes, heart disease, chronic pulmonary disease, chronic liver disease, including chronic alcoholism									

Asplenia ¹¹ including elective splenectomy and terminal complement component deficiencies)	1-dose Td booster every 10 yrs.	3 doses for women through age 26 years (0, 2, 6 mos)	1 or 2 doses	2 doses (0, 4-8 wks)	1 dose annually	1-2 doses	2 doses (0, 6-12, mos, or 0, 6-18 mos)	3 doses (0, 1-2, 4-6 mos)	1 dose
Chronic liver disease, recipients of clotting factor concentrates					1 dose annually		2 doses 6-12 mos, or 0, 6-18 mos)	3 doses (0, 1-2, 4-6 mos)	1 dose
Kidney failure, end-stage renal disease, or recipients of hemodialysis							2 doses (0, 6-12 mos, or 0, 6-18 mos)		
Human Immunodeficiency Virus (HIV) infection ^{3,11}						1-2 doses			
Health-care workers				2 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 indication)

 Contraindicated

*Covered by the Vaccine Injury Compensation Program. For information on how to file a claim call 800-338-2382 or visit www.hrsa.gov/osp/vicp.

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

Footnotes for Recommended Adult Immunization Schedule By Age Group and Medical Conditions, United States, October 2006–September 2007

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 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 www.cdc.gov/

nip/publications/acip-list.htm). Consult the ACIP statement for recommendations for administering Td as prophylaxis in wound management (www.cdc.gov/mmwr/preview/mmwrhtml/00041645.htm). The American College of Physicians Task Force on Adult Immunization supports a second option for Td use in adults: a single Td booster at age 50 years for persons who have completed the full pediatric series, including the teenage/young adult booster. A newly licensed tetanus-diphtheria-acellular-pertussis vaccine is available for adults. ACIP recommendations for its use will be published.

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 (target group 11-12 years old—can administer as young as 9 years of age); 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 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 three 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 healthcare 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 be considered immune to mumps. 1 dose of MMR vaccine should be adequate for protection for those

born during or after 1957 who lack a medical contraindication, a history of mumps based on health-care provider diagnosis, or who lack laboratory evidence of immunity. 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. Two doses of Varicella vaccine are recommended for all adults without evidence of immunity to varicella. Special consideration should be given to those who 1) have close contact with persons at high risk for severe disease (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

Footnotes for Recommended Adult Immunization Schedule By Age Group and Medical Conditions, United States, October 2006–September 2007 (continued)

households with children; nonpregnant women of childbearing age; and international travelers). Evidence of immunity to varicella in adults includes any of the following: 1) documented age-appropriate varicella vaccination (i.e., receipt of 1 dose before age 13 years or receipt of 2 doses [administered at least 4 weeks apart] after age 13 years); 2) U.S.-born before 1966 or history of varicella disease before 1966 for non-U.S.-born persons; (although for health-care workers and pregnant women, birth before 1980 should not be considered evidence of immunity); 3) history of varicella based on health-care provider diagnosis or parental or self-report of typical varicella disease for persons born during 1966–1997 (for a patient reporting a history of an atypical, mild case, 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 who 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 for aspiration (e.g., cognitive dysfunction, spinal cord injury, 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 indica-*

tions: 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. For healthy, nonpregnant persons aged 5–49 years without high-risk conditions who are not contacts of severely immunocompromised persons in special care units, intranasally administered influenza vaccine (FluMist®) may be administered in lieu of 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 transplanta-

tion); chemotherapy with alkylating agents, antimetabolites, or long-term systemic corticosteroids; and cochlear implants. *Other indications:* Alaska Natives and certain American Indian populations; residents of nursing homes and other long-term-care facilities.

7. Revaccination with pneumococcal polysaccharide vaccine. One-time revaccination after 5 years for persons with chronic renal failure or nephritic 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 systemic 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 or who receive clotting factor concentrates. *Behavioral indications:* men who have sex with men or users of 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

Footnotes for Recommended Adult Immunization Schedule By Age Group and Medical Conditions, United States, October 2006–September 2007 (continued)

countries that have high or intermediate endemicity of hepatitis A (for list of countries, see <http://www.cdc.gov/travel/diseases.htm>) as well as 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 hemodialysis patients; 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 have exposure to blood in the workplace and persons in training in schools of medicine, dentistry, nursing, laboratory technology, and other allied health professions. *Behavioral indications:* injection drug users; persons with more than one sex partner

during the previous 6 months; persons with a recently acquired sexually transmitted disease (STD); 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 developmentally disabled persons; all clients of STD clinics; inmates of correctional facilities; and international travelers who will be in countries with high or intermediate prevalence of chronic HBV infection for more than 6 months (for list of countries, see www.cdc.gov/travel/diseases.htm).

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 reside 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 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 meeting any of the above 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.

These immunization schedules indicate the recommended age groups and medical indications for routine administration of currently licensed vaccines for persons aged ≥ 19 years as of October 1, 2006. 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 (ACIP) (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 by telephone, 800-822-7967, or from the VAERS website at www.vaers.hhs.gov.

Information on how to file a Vaccine Injury Compensation Program claim is available at www.hrsa.gov/osp/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, DC 20005, telephone 202-357-6400.

Additional information about the vaccines listed above and contraindications for vaccination is also available at 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.

World Health Organization Clinical Criteria for Metabolic Syndrome

Refer to <http://circ.ahajournals.org/cgi/reprint/circulationaha.105.169404v1>

Measure (any 3 of 5 diagnosis of metabolic syndrome)	Categorical Cutpoints
Elevated waist circumference*†	≥ 102 cm in men ≥ 88 cm in women
Elevated triglycerides	≥ 150 mg/dL (1.7 mmol/L) or On drug treatment for elevated triglycerides
Reduced HDL-C	< 40 mg/dL (0.9mmol/L) in men < 50 mg/dL (1.1 mmol/L) in women or On drug treatment for reduced HDL-C‡
Elevated blood pressure	≥ 130 mm Hg systolic blood pressure or ≥ 85 mm Hg diastolic blood pressure or On antihypertensive drug treatment in a patient with a history of hypertension
Elevated fasting glucose	≥ 100 mg/dL or On drug treatment for elevated glucose

* To measure waist circumference, locate top of right iliac crest. Place a measuring tape in a horizontal plane around abdomen at level of iliac crest.

† Some US adults of non-Asian origin (e.g., white, black, Hispanic) with marginally increased waist circumference (e.g., 94-102 cm [37-39 inches] in men and 80-88 cm [31-35 inches] in women) may have strong genetic contribution to insulin resistance and should benefit from changes in lifestyle habits, similar to men with categorical increases in waist circumference. Lower waist circumference cutpoint (e.g., ≥ 90 cm [35 inches] in men and ≥ 80 cm [31 inches] in women) appears to be appropriate for Asian Americans.

‡ Fibrates and nicotinic acid are the most commonly used drugs for elevated TG and reduced HDL-C. Patients taking one of these drugs are presumed to have high TG and low HDL.

2007 ACP Pocket Guide to Selected Preventive Services for Adults

Section 2: Selected Clinical Guidelines

JNC 7 guidelines for classifying, managing hypertension

Blood pressure classification(BP)	SBP* mmHg	DBP* mmHg	Lifestyle Modification	Without compelling indication		With compelling indications
Normal	<120	<80	Encourage	No antihypertensive drug indicated.		Drug(s) for compelling indications ++
Prehypertension	120–139	or 80–89	Yes			
Stage 1 Hypertension	140–159	or 90–99	Yes	Thiazide-type diuretics for most. May consider ACEI, ARB, BB, CCB, or combination.		Drug(s) for the compelling indications ++. Other anti-hypertensive drugs (diuretics, ACEI, ARB, BB, CCB) as needed
Stage 2 Hypertension	≥ 160	or ≥ 100	<u>Yes</u>	Two-drug combination for most + (usually thiazide-type diuretic and ACEI or ARB or BB or CCB).		

*Treatment determined by highest BP category

+ Initial combined therapy should be used cautiously in those at risk for orthostatic hypotension

++ Treat patients with chronic kidney disease or diabetes to BP goal of <130/80 mmHg.

DBP = diastolic blood pressure; SBP = systolic blood pressure

Drug abbreviations: ACEI, angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; BB, beta-blocker; CCB, calcium channel blocker.

Source: JNC 7, Prevention, Detection, Evaluation and Treatment of High Blood Pressure, NIH, NHLBI Dec 03.

Note: Absence of 10-20% BP decrease during sleep may indicate increased CVD risk.

Diagnostic Workup of Hypertension

- Assess risk factors and comorbidities.
- Reveal identifiable causes of hypertension.
- Assess presence of target organ damage.
- Conduct history and physical examination.
- Obtain laboratory tests: urinalysis, blood glucose, hematocrit and lipid panel, serum potassium, creatinine, and calcium. Optional: urinary albumin/creatinine ratio.
- Obtain electrocardiogram.

Identifiable Causes of Hypertension

- Sleep apnea
- Drug induced/related
- Chronic kidney disease
- Primary aldosteronism
- Renovascular disease
- Cushing's syndrome or chronic steroid therapy
- Pheochromocytoma
- Coarctation of aorta
- Thyroid/parathyroid disease

Major Cardiovascular Disease Risk Factors

- Hypertension
- Obesity
(body mass index >30 kg/m²)
- Dyslipidemia
- Diabetes mellitus
- Cigarette smoking
- Physical inactivity
- Microalbuminuria, estimated glomerular filtration rate < 60 mL/min
- Age (> 55 for men, > 65 for women)
- Family history of premature CVD
(men age < 55 , women age < 65)

Causes of Resistant Hypertension

- Improper BP measurement
- Excess sodium intake
- Medication
 - Inadequate doses
 - Drug actions and interactions (e.g., nonsteroidal anti-inflammatory drugs, illicit drugs, sympathomimetics, oral contraceptives), over-the-counter drugs and herbal supplements
- Excess alcohol intake
- Identifiable causes of hypertension

TREATMENT STRATEGIES

- Treat to BP <140/90 mmHg or BP <130/80 mmHg in patients with diabetes or chronic kidney disease. ACP recommends BP < 135/80 for diabetics (see *Annals of Internal Medicine*, April 2003)
- Diuretics, particularly Thiazides, are generally the first choice for therapy unless contraindicated or there is a compelling indication to use another drug (see below).
- Majority of patients will require two medications to reach goal.
- ACP recommends that Thiazide diuretics or ACE inhibitors can be used as first-line agents for blood pressure control in most patients with diabetes. (see *Annals of Internal Medicine*, April 2003)

COMPELLING INDICATIONS FOR INDIVIDUAL DRUG CLASSES

Compelling Indication	Initial Therapy Options
• Heart failure	THIAZ, ACEI, ARB, ALDO ANT
• Post-myocardial infarction	BB, ACEI, ALDO ANT
• High CVD risk	THIAZ, BB, ACEI, CCB
• Diabetes	THIAZ, BB, ACEI, ARB, CCB
• Chronic kidney disease	ACEI, ARB
• Recurrent stroke prevention	THIAZ, ACEI

Key: THIAZ = thiazide diuretic, ACEI= angiotensin converting enzyme inhibitor, ARB = angiotensin receptor blocker, BB = beta blocker, CCB = calcium channel blocker, ALDO ANT = aldosterone antagonist

ATP III LDL-C Goals and Cutpoints for TLC and Drug Therapy in Different Risk Categories and Proposed Modifications Based on Recent Clinical Trial Evidence

Risk Category	LDL-C Goal	Initiate TLC	Consider Drug Therapy**
<i>High risk:</i> CHD* or CHD risk equivalents† (10-year risk > 20%)	≥ 100 mg/dL [‡] (optional goal: < 70 mg/dL) [‡]	≥ 100 mg/dL#	≥ 100 mg/dL ‡‡ (< 100 mg/dL: consider drug options)††
<i>Moderately high risk:</i> 2+ risk factors‡ (10-year risk 10% to 20%) §§	< 130 mg/dL	≥ 130 mg/dL#	≥ 130 mg/dL (100-129mg/dL; consider drug options)‡
<i>Moderate risk:</i> 2+ factors ‡ (10-year risk < 10%) §§	< 130 mg/dL	≥ 130 mg/dL	≥ 160mg/dL
<i>Lower risk:</i> 0-1 risk factors§	< 160 mg/dL	≥ 160 mg/dL	≥ 190 mg/dL (160-189 mg/dL: LDL-lowering drug optional)

TLC—Therapeutic Lifestyle Changes

* CHD includes history of myocardial infarction, unstable angina, stable angina, coronary artery procedures (angioplasty or bypass surgery), or evidence of clinically significant myocardial ischemia.

† CHD risk equivalents include clinical manifestations of noncoronary forms of atherosclerotic disease (peripheral arterial disease, abdominal aortic aneurysm, and carotid artery disease [transient ischemic attacks or stroke of carotid origin or >50% obstruction of a carotid artery]), diabetes, and 2+ risk factors with 10-year risk for hard CHD>20%.

‡ Risk factors include cigarette smoking, hypertension (BP ≥140/90 mm Hg or on antihypertensive medication), low HDL cholesterol (<40 mg/dL), family history of premature CHD (CHD in male first-degree relative <55 years of age; CHD in female first-degree relative <65 years of age), and age (men ≥45 years; women ≥55 years).

§§Electronic 10-year risk calculators are available at www.nhlbi.nih.gov/guidelines/cholesterol.

§ Almost all people with zero or 1 risk factor have a 10-year risk <10%, and 10-year risk assessment in people with zero or 1 risk factor is thus not necessary.

|| Very high risk favors the optional LDL-C goal of <70 mg/dL, and in patients with high triglycerides, non-HDL-C <100 mg/dL.

¶ Optional LDL-C goal <100 mg/dL.

Any person at high risk or moderately high risk who has lifestyle-related risk factors (e.g., obesity, physical inactivity, elevated triglyceride, low HDL-C, or metabolic syndrome) is a candidate for therapeutic lifestyle changes to modify these risk factors regardless of LDL-C level.

**When LDL-lowering drug therapy is employed, it is advised that intensity of therapy be sufficient to achieve at least a 30% to 40% reduction in LDL-C levels.

††If baseline LDL-C is <100 mg/dL, institution of an LDL-lowering drug is a therapeutic option on the basis of available clinical trial results. If a high-risk person has high triglycerides or low HDL-C, combining a fibrate or nicotinic acid with an LDL-lowering drug can be considered.

‡‡For moderately high-risk persons, when LDL-C level is 100 to 129 mg/dL, at baseline or on lifestyle therapy, initiation of an LDL-lowering drug to achieve an LDL-C level <100 mg/dL is a therapeutic option on the basis of available clinical trial results.

ADA Guidelines for the Diagnosis of Diabetes Mellitus
(Based on ADA Position Statement
“Diagnosis and Classification of Diabetes Mellitus” 2005 in *Diabetes Care*)

Stage	Fasting Plasma Glucose	Casual Plasma Glucose	Oral Glucose Tolerance Test
Normal	< 100 mg/dL		< 140 mg/dL at 2 hours
Pre-Diabetes	100-125 mg/dL Impaired Fasting Glucose		140-199 mg/dL at 2 hours Impaired Glucose Tolerance (IGT)
Diabetes Mellitus	≥126 mg/dL (2 separate days)	>200 mg/dL with symptoms ¹	≥200 mg/dL at 2 hours

¹ Symptoms include polyuria, polydipsia, and unexplained weight loss.

Patients with IFG and/or IGT are now referred to as having “pre-diabetes” indicating the relatively high risk for development of diabetes in these patients. In the absence of pregnancy, IFG and IGT are not clinical entities in their own right but rather risk factors for future diabetes as well as cardiovascular disease. They can be observed as intermediate stages in any of the disease processes listed in Table 1 of the article, http://care.diabetesjournals.org/cgi/content/full/28/suppl_1/s37. IFG and IGT are associated with the metabolic syndrome, which includes obesity (especially abdominal or visceral obesity), dyslipidemia of the high-triglyceride and/or low-HDL type, and hypertension. It is worth mentioning that medical nutrition therapy aimed at producing 5-10% loss of body weight, exercise, and certain pharmacological agents have been variably demonstrated to prevent or delay the development of diabetes in people with IGT; the potential impact of such interventions to reduce cardiovascular risk has not been examined to date.

The guidelines contained in this guide are the opinions of the American Cancer Society (ACS), American Diabetes Association (ADA), American Association of Clinical Endocrinologists (AACE), National Cholesterol Education Program (NCEP), US Preventive Services

Task Force (USPSTF), Joint National Committee (JNC-VII), and do not necessarily represent official opinions of the ACP. Individual physician judgement is needed to decide the right type and frequency of screening test for any individual patient.

