

# **Pocket Guide to Selected Preventive Services for Adults**

7th edition, April 2009  
Council of Young Physicians

**ACP**<sup>SM</sup>

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. Additionally, the Council will work to ensure that the views of Young Physicians are reflected in all College deliberations and discussions. 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.

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 and Quality of Care Department. Special thanks to Christina Reimer, MD, FACP, and Amir Qaseem, MD, PhD, MHA, FACP, for editing this guide.

For more about the College, we encourage you to visit the College’s Web site, [www.acponline.org](http://www.acponline.org).

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## 2009 ACP Pocket Guide to Selected Preventive Services for Adults

### Clinical Preventive Services for Normal-Risk Adults

The American College of Physicians Guidelines ([www.acponline.org/clinical\\_information/guidelines](http://www.acponline.org/clinical_information/guidelines)) and the U.S. Preventive Services Task Force ([www.ahrq.gov/clinic/uspstf/uspsttopics.htm](http://www.ahrq.gov/clinic/uspstf/uspsttopics.htm)) were used to develop this guide.

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
Abdominal aortic aneurysm screening	Age 65 to 75 (Men; current or former smokers)	USPSTF/ 2005	One-time	USPSTF recommends one-time screening for AAA by abdominal ultrasound in men age 65–75 years who have ever smoked.	B
				USPSTF makes no recommendation for or against screening for AAA in men age 65–75 years who have never smoked.	C
				USPSTF recommends <u>against</u> routine screening for AAA in women, regardless of age.	D
Asymptomatic bacteriuria screening	All pregnant women at 12–16 weeks gestation	USPSTF/ 2008	One-time	USPSTF recommends screening for asymptomatic bacteriuria with urine culture for pregnant women at 12–16 weeks gestation or at the first prenatal visit, if later.	A
				USPSTF recommends <u>against</u> routine screening of men and nonpregnant women.	D

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

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
Blood pressure screening	>18	USPSTF/ 2007	Periodically	USPSTF recommends screening adults age 18 years and older for high blood pressure.	A
Breast cancer screening	40–49	ACP/ 2007	1–2 years	<p>ACP recommends that clinicians should periodically perform individualized assessment of risk for breast cancer to help guide decisions about screening mammography.</p> <p>ACP recommends that clinicians should inform women 40–49 years of age about the potential benefits and harms of screening mammography.</p> <p>ACP recommends that clinicians should base screening mammography decisions on benefits and harms of screening, as well as on a woman's preferences and breast cancer risk profile.</p>	

Breast cancer screening	>40	USPSTF/2002	1–2 years	<p>USPSTF recommends screening mammography, with or without clinical breast examination (CBE), every 1–2 years for women age 40 years and older.</p> <p>USPSTF concludes that the evidence is insufficient to recommend for or against routine CBE alone to screen for breast cancer.</p> <p>USPSTF concludes that the evidence is insufficient to recommend teaching or performing routine breast self-examination (BSE).</p>	<p>B</p> <p>I</p> <p>I</p>
Breast cancer screening	(Genetic risk)	USPSTF/2005		<p>USPSTF recommends that women whose family history is associated with an increased risk for deleterious mutations in <i>BRCA1</i> or <i>BRCA2</i> genes be referred for genetic counseling and evaluation for <i>BRCA</i> testing.</p> <p>The U.S. Preventive Services Task Force (USPSTF) recommends against routine referral for genetic counseling or routine breast cancer susceptibility gene (<i>BRCA</i>) testing for women whose family history is not associated with an increased risk for deleterious mutations in breast cancer susceptibility gene 1 (<i>BRCA1</i>) or breast cancer susceptibility gene 2 (<i>BRCA2</i>).</p>	<p>B</p> <p>D</p>

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

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
Cervical cancer screening	≥21 or first sexual intercourse	USPSTF/ 2003	At least every 3 years	The USPSTF strongly recommends screening for cervical cancer in women who have been sexually active and have a cervix.	A
				The USPSTF recommends <u>against</u> routinely screening women older than age 65 years for cervical cancer if they have had adequate recent screening with normal Pap smears and are not otherwise at high risk for cervical cancer.	D
				The USPSTF recommends <u>against</u> routine Pap smear screening in women who have had a total hysterectomy for benign disease.	D
				The USPSTF concludes that the evidence is insufficient to recommend for or against the routine use of new technologies to screen for cervical cancer.	I
				The USPSTF concludes that 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.	I

COPD screening	adults	ACP/ 2007		ACP recommends that in patients with respiratory symptoms, particularly dyspnea, spirometry should be performed to diagnose airflow obstruction. Spirometry should not be used to screen for airflow obstruction in asymptomatic individuals.	Strong recommendation; moderate-quality evidence
Chlamydia screening	≤24 (women)	USPSTF/ 2007	Variable	<p>The USPSTF recommends screening sexually active women age ≤24 years of age and other asymptomatic women at increased risk for chlamydia infection.</p> <p>The USPSTF recommends screening all pregnant women ≤24 years of age and other pregnant women at risk for infection.</p> <p>The USPSTF recommends <u>against</u> screening women ≤25 years of age not at increased risk of chlamydial infection.</p> <p>The USPSTF concludes that there is insufficient evidence to recommend for or against screening asymptomatic men for chlamydia.</p> <p><i>Women at increased risk for infection include those with a history of STDs, exchanging sex for money or drugs, inconsistent use of barrier contraceptives, or new/multiple sexual partners or who live in high-prevalence areas.</i></p>	<p>A</p> <p>B</p> <p>C</p> <p>I</p>

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

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
Colorectal Cancer screening	≥50	USPSTF/ 2008	Variable	The USPSTF recommends screening for colorectal cancer (CRC) by using fecal screening occult blood testing, sigmoidoscopy, or colonoscopy in adults, beginning at age 50 years and continuing until age 75 years. The risks and benefits of these screening methods vary.	A
				The USPSTF recommends against routine screening for colorectal cancer in adults age 76 to 85 years. There may be considerations that support colorectal cancer screening in an individual patient.	C
				The USPSTF recommends against screening for colorectal cancer in adults older than age 85 years.	D
				The USPSTF concludes that the evidence is insufficient to assess the benefits and harms of computed tomographic colonography and fecal DNA testing as screening modalities for colorectal cancer.	I

Depression screening	All	USPSTF/ 2002	Variable	<p>The USPSTF recommends screening adults for depression in clinic practices that have systems in place to ensure accurate diagnosis, effective treatment, and follow-up.</p> <p><i>Screening strategies</i></p> <p><i>Asking 2 simple questions about mood and anhedonia (“Over the past 2 weeks, have you felt down, depressed, or hopeless?” and “Over the past 2 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.</i></p>	B
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## Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
Diabetes screening		USPSTF/ 2008		The USPSTF recommends screening for type 2 diabetes in asymptomatic adults with sustained blood pressure (either treated or untreated) greater than 135/80 mm Hg.	B
				The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for type 2 diabetes in asymptomatic adults with blood pressure of 135/80 mm Hg or lower.	I
Gonorrhea screening	Variable (women)	USPSTF/ 2005	Variable	<p>The USPSTF recommends clinicians screen all sexually active women including pregnant women, for gonorrhea infection if they are at increased risk for infection.</p> <p><i>Women at risk of infection have individual or population risk factors: history of prior gonorrhea infection, other STDs, new or multiple sexual partners, inconsistent condom use, sex work, or drug use.</i></p>	B

Gonorrhea screening (continued)	Variable	USPSTF/ 2005	Variable	<p>The USPSTF found insufficient evidence to recommend for or against screening men at high risk of infection.</p> <p>The USPSTF recommends <u>against</u> screening men or women who are at low risk for gonorrhea.</p> <p>The USPSTF found insufficient evidence to recommend for or against routine screening for gonorrhea infection in pregnant women who are not at increased risk for infection.</p> <p>The USPSTF strongly recommends prophylactic ocular topical medication for all newborns against gonococcal ophthalmia neonatorum.</p>	<p>I</p> <p>D</p> <p>I</p> <p>A</p>
Hepatitis B virus (HBV) screening	Variable (pregnant women)	USPSTF/ 2004		<p>The USPSTF strongly recommends screening pregnant women for hepatitis B virus infection at their first prenatal visit.</p> <p>The USPSTF recommends <u>against</u> routinely screening the general asymptomatic population for chronic hepatitis B infection.</p>	<p>A</p> <p>D</p>



HIV screening	>13 years	ACP/2009	Individualized	<p>ACP recommends that clinicians adopt screening routine for HIV and encourage patients to be tested.</p> <p>ACP recommends that clinicians determine the need for repeat screening on an individual basis.</p>	
HIV screening	Variable	USPSTF/2007	Variable	<p>The USPSTF strongly recommends screening for human immunodeficiency virus (HIV) in all adolescents and adults at increased risk for HIV infection.</p> <p>The USPSTF makes no recommendation for or against routinely screening for HIV adolescents and adults who are not at risk for HIV infection.</p> <p>The USPSTF recommends that clinicians screen all pregnant women for HIV.</p>	<p>A</p> <p>C</p> <p>A</p>

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

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
HIV screening <i>(continued)</i>	Variable	USPSTF/ 2007	Variable	<p><i>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; and persons who request an HIV test despite no reportable risk factors.</i></p> <p><i>Those who are seen in high-risk/high-prevalence settings (e.g., correctional facilities, homeless shelters, TB clinics, adolescent clinics, and clinics that serve men who have sex with men) may also benefit from screening.</i></p>	

Lipid disorders screening	≥35 (men) ≥45 (women)	USPSTF/2008	Variable	<p>Screening men:</p> <p>The USPSTF strongly recommends screening men age 35 years and older for lipid disorders.</p> <p>The USPSTF recommends screening men age 20 to 35 years for lipid disorders if they are at increased risk for coronary heart disease.</p> <p>Screening women at increased risk:</p> <p>The USPSTF strongly recommends screening women age 45 years and older for lipid disorders if they are at increased risk for coronary heart disease.</p> <p>The USPSTF recommends screening women aged 20 to 45 for lipid disorders if they are at increased risk for coronary heart disease.</p> <p>Screening young men and all women not at increased risk:</p> <p>The USPSTF makes no recommendation for or against routine screening for lipid disorders in men age 20 to 35 years, or in women age 20 years and older who are not at increased risk for coronary heart disease.</p>	<p>A</p> <p>B</p> <p>A</p> <p>B</p> <p>C</p>
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## Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
Lung cancer screening		USPSTF/ 2004		The USPSTF concludes that the evidence is insufficient to recommend for or against screening asymptomatic persons for lung cancer with either low dose computerized tomography (LDCT), chest x-ray (CXR), sputum cytology, or a combination of these tests.	I
Osteoporosis screening	>65	USPSTF/ 2002	Variable	<p>The USPSTF recommends that women age 65 years and older be screened routinely for osteoporosis. The USPSTF recommends that routine screening begin at age 60 for women at increased risk for osteoporotic fractures.</p> <p>USPSTF makes no recommendation for or against routine osteoporosis screening in postmenopausal women who are younger than 60 or in women age 60–64 years who are not at increased risk for osteoporotic fractures.</p>	<p>B</p> <p>C</p>

Osteoporosis screening in men		ACP/ 2007		<p>ACP recommends that clinicians periodically perform individualized assessment of risk factors for osteoporosis in older men.</p> <p>ACP recommends that clinicians obtain DXA for men who are at increased risk for osteoporosis and are candidates for drug therapy.</p>	Strong recommendation; moderate-quality evidence
Ovarian cancer screening		USPSTF/ 2004		The USPSTF recommends <u>against</u> routine screening for ovarian cancer.	D
Prostate cancer screening	≥50	USPSTF/ 2008	Yearly	<p>The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of prostate cancer screening in men younger than age 75 years.</p> <p>The USPSTF recommends <u>against</u> screening for prostate cancer in men age 75 years or older.</p> <p>The ACS (American Cancer Society) recommends yearly screening with PSA and DRE beginning at age 50 years in men who have a &gt;10-year life expectancy. Begin screening at age 45 years in African Americans or those with a first-degree relative with prostate cancer. Consider screening at age 40 for those with multiple first-degree relatives with prostate cancer at an early age.</p>	I  D

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

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
Syphilis screening	Variable	USPSTF	Variable	The USPSTF strongly recommends that clinicians screen persons at increased risk for syphilis infection.	A
				The USPSTF strongly recommends that clinicians screen all pregnant women for syphilis infection.	A
				The USPSTF recommends against routine screening of asymptomatic persons who are not at increased risk for syphilis infection.	D
Thyroid disease screening		USPSTF/ 2004		The USPSTF concludes the evidence is insufficient to recommend for or against routine screening for thyroid disease in adults.	I
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.	

Aspirin for CAD prevention	Variable	USPSTF/ 2002	Reasonable option— every 5 years in middle-age and older people when other cardiovascular factors are detected	<p>The USPSTF strongly recommends discussing aspirin chemoprevention with adults who are at increased risk for coronary artery disease. Discussions with patients should address both the potential benefits and harms of aspirin therapy.</p> <p><i>Balance of benefits and harms is most favorable in patients at high risk of CHD (5-year risk of CAD <math>\geq</math> 3%) but is also influenced by patient preferences. To calculate risk, go to <a href="http://healthlink.mcw.edu/article/923521437.html">http://healthlink.mcw.edu/article/923521437.html</a>.</i></p> <p><i>Optimum dose of aspirin for chemoprevention is not known.</i></p>	A
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## Clinical Preventive Services for Normal-Risk Adult *(continued)*

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
<b>CHEMOPROPHYLAXIS</b>					
Aspirin and NSAIDs for colorectal cancer prevention		USPSTF/ 2007		The USPSTF recommends <u>against</u> the use of aspirin for NSAIDs to protect against colorectal cancer in individuals at average risk.	D
Breast cancer chemo-prevention		USPSTF/ 2002		The USPSTF recommends <u>against</u> routine use of tamoxifen or raloxifene for primary prevention of breast cancer in women at low or average risk.	D
				The USPSTF recommends discussing chemoprevention with women at high risk for breast cancer and low risk for side effects.	B
Hormone replacement therapy	All postmenopausal women	USPSTF/ 2005		The USPSTF recommends <u>against</u> the routine use of estrogen and progestin for the prevention of chronic conditions in postmenopausal women (such as heart disease or osteoporosis).	D
				The USPSTF recommends <u>against</u> the routine use of unopposed estrogen for prevention of chronic conditions in postmenopausal women who have had a hysterectomy.	D



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

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
<b>COUNSELING</b> <i>(continued)</i>					
Healthy diet	Variable	USPSTF/ 2003	Periodically	The 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.	I
				The 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 by other specialists, such as nutritionists or dietitians.	B
Injury prevention (motor vehicle)	All	USPSTF/ 2007		The USPSTF concludes that the evidence is insufficient to assess the incremental benefit, beyond the efficacy of legislation and community-based interventions, of counseling in the in primary care setting for improving rates of proper use of motor vehicle occupant restraints (child safety seats, booster seats, and lap-and-shoulder belts).	I

**COUNSELING** *(continued)*

Injury prevention (motor vehicle) <i>(continued)</i>	All	USPSTF/ 2007		The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of routine counseling of all patients in the primary care setting to reduce driving while under the influence of alcohol or riding with drivers who are alcohol-impaired.	I
Obesity	All	USPSTF/ 2003	Periodically	<p>The USPSTF recommends screening all adult patients for obesity and offering intensive counseling and behavioral interventions to promote sustained weight loss for obese (BMI <math>\geq 30</math>) adults.</p> <p>The USPSTF concludes that the evidence is insufficient to recommend for or against the use of moderate- or low-intensity counseling together with behavioral interventions to promote sustained weight loss in obese adults.</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 (BMI 25–29.9) adults.</p>	<p>B</p> <p>I</p> <p>I</p>

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

Service	Age	Society/ Year	Recommended Frequency	Comments	Grade
<b>COUNSELING</b> <i>(continued)</i>					
Obesity <i>(continued)</i>	All	USPSTF/ 2003	Periodically	<i>Intensity of counseling is defined by frequency of the intervention. High-intensity intervention is more than 1 person-to-person (individual or group) session per month for at least first 3 months of the intervention. Advisable to refer obese patients to programs which offer intensive counseling and behavioral interventions for optimal weight loss.</i>	
Regular physical activity	All	USPSTF/ 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

**COUNSELING (continued)**

Tobacco cessation	All tobacco users	USPSTF/ 2003	Periodically	<p>The USPSTF <u>strongly</u> recommends:</p> <p>Screen ALL adults for tobacco use and provide tobacco cessation interventions for those who use tobacco products.</p> <p>Screen ALL pregnant women for tobacco use and provide augmented pregnancy-tailored counseling to those who smoke.</p> <p>The USPSTF concludes that the evidence is insufficient to recommend for or against routine screening for tobacco use or interventions to prevent and treat tobacco use and dependence among children or adolescents.</p>	<p>A</p> <p>A</p> <p>I</p>
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Source: [www.ahrq.gov/clinic/uspstfix.htm](http://www.ahrq.gov/clinic/uspstfix.htm)

## The American College of Physicians Guideline Grading System\*

Strength of Recommendation		
Quality of Evidence	Benefits clearly outweigh risks and burden OR risks and burden clearly outweigh benefits	Benefits finely balanced with risks and burden
High	Strong	Weak
Moderate	Strong	Weak
Low	Strong	Weak
Insufficient evidence to determine net benefits or risks	I-recommendation	

\*Adopted from the classification developed by the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) workgroup.

**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).**

**Grade Definitions Prior to May 2007**

The definitions below (of USPSTF grades and quality of evidence ratings) were in use prior to the update and apply to recommendations voted on by the USPSTF prior to May 2007.

- A. Strongly Recommended: 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. Recommended: 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. No Recommendation: 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. Not Recommended: 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. Insufficient Evidence to Make a Recommendation: 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.

**USPSTF Grade Definitions After May 2007**

The USPSTF updated its definitions of the grades it assigns to recommendations and now includes "suggestions for practice" associated with each grade. The USPSTF has also defined levels of certainty regarding net benefit. These definitions apply to USPSTF recommendations voted on after May 2007.

<b>Grade</b>	<b>Definition</b>	<b>Suggestions for Practice</b>
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small.	Offer or provide this service only if other considerations support the offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

## Recommended Adult Immunization Schedule

[www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm](http://www.cdc.gov/vaccines/recs/schedules/adult-schedule.htm)

**Note:** These recommendations must be read with the footnotes that follow.

**Figure 1. Recommended adult immunization schedule by vaccine and age group  
United States, 2009**

Vaccine ▼ Age Group ►	19-26 years	27-49 years	50-59 years	60-64 years	≥65 years
Tetanus-diphtheria, pertussis (Td/Tdap) <sup>1,*</sup>	Substitute 1-time dose of Tdap for Td booster, then boost with Td every 10 years				Td booster every 10 years
Human papillomavirus (HPV) <sup>2,*</sup>	3 doses (females)				
Varicella <sup>3,*</sup>	2 doses				
Zoster <sup>4</sup>					1 dose
Measles, mumps, rubella (MMR) <sup>5,*</sup>	1 or 2 doses		1 dose		
Influenza <sup>6,*</sup>			1 dose annually		
Pneumococcal polysaccharide) <sup>7,8</sup>	1 or 2 doses				1 dose
Hepatitis A <sup>9,*</sup>	2 doses				

Hepatitis B <sup>10,*</sup>	3 doses
Meningococcal <sup>11,*</sup>	1 or more doses

\*Covered by the Vaccine 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

**NOTE: The above recommendations must be read along with the footnotes on pages Q2–Q4 of this schedule.**

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](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 [www.hrsa.gov/vaccinecompensation](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 also available at [www.cdc.gov/vaccines](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.

**Figure 2. Vaccines that might be indicated for adults based on medical and other indications  
United States, 2009**

Vaccine ▼	Indication ►	Preg- nancy	Immuno- compromising conditions (excluding human immuno- deficiency virus (HIV), medications, radiation <sup>13</sup> )	HIV Infection <sup>3,12,13</sup> CD4+ T lymphocyte count		Diabetes, heart disease, chronic pulmonary disease, chronic alcoholism	Asplenia <sup>12</sup> (including elective splenectomy and terminal component deficiencies).	Chronic liver disease	Kidney failure end-stage renal disease, receipt of hemo- dialysis	Health- care per- sonnel	
				<200 cells/ µL	≥200 cells/ µL						
Tetanus-diphtheria, pertussis (Td/Tdap) <sup>1,*</sup>		Td	Substitute 1-time dose of Tdap for Td booster; then boost with Td every 10 years								
Human papillomavirus (HPV) <sup>2,*</sup>			3 doses for females through age 26 years								
Varicella <sup>3,*</sup>			<b>Contraindicated</b>	2 doses							
Zoster <sup>4</sup>			<b>Contraindicated</b>	1 dose							
Measles, mumps, rubella (MMR) <sup>5,*</sup>			<b>Contraindicated</b>	1 or 2 doses							
Influenza <sup>6,*</sup>			1 dose TIV annually								1 dose TIV or LAIV annually
Pneumococcal (polysaccharide) <sup>7,8</sup>			1 or 2 doses								
Hepatitis A <sup>9,*</sup>			2 doses								

Hepatitis B <sup>10,*</sup>			3 doses	
Meningococcal <sup>11,*</sup>			1 or more doses	

\*Covered by the Vaccine 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

**NOTE: The above recommendations must be read along with the footnotes on pages Q2–Q4 of this schedule.**

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

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.

# Footnotes for Recommended Adult Immunization Schedule By Age Group and Medical Conditions, United States

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

Tdap should replace a single dose of Td for adults age 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. However, 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 or more years previously. Tdap or Td vaccine may be used, as indicated.

If a woman is pregnant and received the last Td vaccination 10 or more years previously, administer Td during the second or third trimester. If the woman received the last Td vaccination less than 10 years previously, administer Tdap during the immediate postpartum period. A dose of Tdap is recommended for postpartum women, close contacts of infants age less than 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 may be administered instead of Td to a pregnant woman after an informed discussion with the woman.

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

## 2. Human papillomavirus (HPV) vaccination

HPV vaccination is recommended for all females age 11 through 26 years (and may begin at age 9 years) who have not completed the vaccine series. History of genital warts, abnormal Papanicolaou test, or positive HPV DNA test is not evidence of prior infection with all vaccine HPV types; HPV vaccination is recommended for persons with such histories.

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 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.

A complete series consists of 3 doses. The second dose should be administered 2 months after the first dose; the third dose should be administered 6 months after the first dose.

HPV vaccination is not specifically recommended for females with the medical indications described in Figure 2, "Vaccines that might be indicated for adults based on medical and other indications." Because HPV vaccine is not a live-virus vaccine, it may be administered to persons with the medical indications described in Figure 2. 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 one 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 to 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 health care provider 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 age 60 years and older 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**

*Measles component:* Adults born before 1957 generally are considered immune to measles. Adults born during or after 1957 should receive 1 or more doses of MMR unless they have a medical contraindication, documentation of 1 or more doses, history of measles based on health care provider diagnosis, or laboratory evidence of immunity.

A second dose of MMR is recommended for adults who 1) have been recently exposed to measles or 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 before 1957 generally are considered immune to mumps. Adults born during or after 1957 should receive 1 dose of MMR unless they have a medical contraindication, history of mumps based on health care provider diagnosis, or laboratory evidence of immunity.

A second dose of MMR is recommended for adults

## Footnotes for Recommended Adult Immunization Schedule By Age Group and Medical Conditions, United States *(continued)*

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. For unvaccinated health care personnel born before 1957 who do not have other evidence of mumps immunity, administering 1 dose on a routine basis should be considered and administering a second dose during an outbreak should be strongly considered.

**Rubella component:** 1 dose of MMR vaccine is recommended for women whose rubella vaccination history is unreliable 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.

### 6. Influenza vaccination

**Medical indications:** 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 human immunodeficiency virus [HIV]); any condition that compromises respiratory function or the handling of respiratory secretions or that can increase the risk of aspiration (e.g., cognitive dysfunction, spinal cord injury, or seizure disorder or

other neuromuscular disorder); and pregnancy during the influenza season. No data exist on the risk for severe or complicated influenza disease among persons with a splenia; however, influenza is a risk factor for secondary bacterial infections that can cause severe disease among persons with asplenia.

**Occupational indications:** All health care personnel, including those employed by long-term care and assisted-living facilities, and caregivers of children less than 5 years old.

**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 (e.g., in-home household contacts and caregivers of children age less than 5 years, persons 65 years of age and older and persons of all ages with high-risk condition[s]); and anyone who would like to decrease their risk of getting influenza. Healthy, nonpregnant adults age less than 50 years without high-risk medical conditions who are not contacts of severely immunocompromised persons in special care units can receive either intranasally administered live, attenuated influenza vaccine (FluMist®) or inactivated vaccine. Other persons should receive the inactivated vaccine.

### 7. Pneumococcal polysaccharide (PPSV) vaccination

**Medical indications:** Chronic lung disease (including asthma; chronic cardiovascular diseases; diabetes mellitus; chronic liver diseases, cirrhosis; chronic alcoholism, 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]); immunocompromising conditions; and cochlear implants and cerebrospinal fluid leaks. Vaccinate as close to HIV diagnosis as possible.

*Other indications:* Residents of nursing homes or other long-term care facilities and persons who smoke cigarettes. Routine use of PPSV is not recommended for Alaska Native or American Indian persons younger than 65 years unless they have underlying medical conditions that are PPSV indications. However, public health authorities may consider recommending PPSV for Alaska Natives and American Indians age 50 through 64 years who are living in areas in which the risk of 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 age 65 years and older, one-time revaccination if they were vaccinated 5 or more years previously and were younger than 65 years at the time of primary vaccination.

## 9. Hepatitis A vaccination

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

*Behavioral indications:* Men who have sex with men and persons who use illegal drugs.

*Occupational indications:* Persons working with hepatitis A virus (HAV)--infected primates or with HAV in a research laboratory setting.

*Other indications:* Persons traveling to or working in countries that have high or intermediate endemicity of

hepatitis A (a list of countries is available at [www.cdc.gov/travel/content/diseases.aspx](http://www.cdc.gov/travel/content/diseases.aspx)) and any person seeking protection from HAV infection.

Single-antigen vaccine formulations should be administered in a 2-dose schedule at either 0 and 6–12 months (Havrix<sup>®</sup>) or 0 and 6–18 months (Vaqta<sup>®</sup>). If the combined hepatitis A and hepatitis B vaccine (Twinrix<sup>®</sup>) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, administered on days 0, 7, and 21 to 30 followed by a booster dose at month 12 may be used.

## 10. Hepatitis B vaccination

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

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

*Behavioral indications:* Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., persons with more than 1 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.

*Other indications:* Household contacts and sex partners of persons with chronic hepatitis B virus (HBV) infection, clients and staff members of institutions for persons with developmental disabilities, 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>), and any adult seeking protection from HBV infection.

## Footnotes for Recommended Adult Immunization Schedule By Age Group and Medical Conditions, United States (continued)

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.

If the combined hepatitis A and hepatitis B vaccine (Twinrix<sup>®</sup>) is used, administer 3 doses at 0, 1, and 6 months; alternatively, a 4-dose schedule, administered on days 0, 7, and 21 to 30 followed by a booster dose at month 12 may be used.

Special formulation indications: For adult patients receiving hemodialysis or with other immunocompromising conditions, 1 dose of 40 µg/mL (Recombivax HB<sup>®</sup>) administered on a 3-dose schedule or 2 doses of 20 µg/mL (Engerix-B<sup>®</sup>) administered simultaneously on a 4-dose schedule at 0, 1, 2, and 6 months.

### 11. 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 routinely exposed to isolates of *Neisseria meningitidis*; military recruits; and persons who travel to or live in countries in which meningococcal disease is hyperendemic or epidemic (e.g., the "meningitis belt" of sub-Saharan Africa during the dry season [December--June]), particularly if their contact with local

populations will be prolonged. Vaccination is required by the government of Saudi Arabia for all travelers to Mecca during the annual Hajj.

Meningococcal conjugate vaccine (MCV) is preferred for adults with any of the preceding indications who are age 55 years or younger, although meningococcal polysaccharide vaccine (MPSV) is an acceptable alternative. Revaccination with MCV after 5 years might be indicated for adults previously vaccinated with MPSV who remain at increased risk for infection (e.g., persons residing in areas in which disease is epidemic).

### 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 and older. 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 vaccine to these patients is not contraindicated.

### 13. Immunocompromising conditions

Inactivated vaccines generally are acceptable (e.g., pneumococcal, meningococcal, and influenza [trivalent 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>.

## 2009 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*, mm Hg	DBP*, mm Hg	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	Yes	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, β-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 comorbid conditions.
- 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/m<sup>2</sup>)
- Dyslipidemia
- Diabetes mellitus
- Cigarette smoking
- Physical inactivity
- Microalbuminuria, estimated glomerular filtration rate  $<60$  mL/min
- Age ( $>55$  years for men,  $>65$  years for women)
- Family history of premature CVD (men age  $<55$  years, women age  $<65$  years)

## 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 mm Hg 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.

## COMPELLING INDICATIONS FOR INDIVIDUAL DRUG CLASSES

<b>Compelling Indication</b>	<b>Initial Therapy Options</b>
• Heart failure	THIAZ, ACEI, BB, 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 <sup>¶</sup>  (optional goal: <70 mg/dL) <sup>‡</sup>	≥100 mg/dL <sup>#</sup>	≥100 mg/dL <sup>‡‡</sup>  (<100 mg/dL: consider drug options) <sup>††</sup>
<i>Moderately high risk:</i> 2+ risk factors <sup>‡</sup> (10-year risk 10% to 20%) §§	<130 mg/dL <sup>¶¶</sup>	≥130 mg/dL <sup>#</sup>	≥130 mg/dL  (100–129mg/dL; consider drug options) <sup>‡‡</sup>
<i>Moderate risk:</i> 2+ factors <sup>‡</sup> (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](http://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 with 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”, 2008 in *Diabetes Care*)  
[care.diabetesjournals.org/cgi/reprint/31/Supplement\\_1/S55](http://care.diabetesjournals.org/cgi/reprint/31/Supplement_1/S55)

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 <sup>1</sup>	≥200 mg/dL at 2 hours

<sup>1</sup>Symptoms include polyuria, polydipsia, and unexplained weight loss.

Patients with IFG and/or IGT are now referred to as having “pre-diabetes,” which indicates 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. 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 College of Gastroenterology (ACG), National Cholesterol Education Program (NCEP), U.S. Preventive Services

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

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