NATIONAL GUIDELINE CLEARINGHOUSE™ (NGC) GUIDELINE SYNTHESIS

SCREENING FOR LIPID DISORDERS IN ADULTS

GUIDELINES BEING COMPARED

1. **University of Michigan Health System (UMHS)**. Screening and management of lipids. Ann Arbor (MI): University of Michigan Health System; 2009 Feb. 15 p. [12 references]
2. **United States Preventive Services Task Force (USPSTF)**. Screening for lipid disorders in adults: U.S. Preventive Services Task Force recommendation statement. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2008 Jun. 13 p. [17 references]
3. **Department of Veterans Affairs, Department of Defense (VA/DoD)**. VA/DoD clinical practice guideline for the management of dyslipidemia. Washington (DC): Department of Veterans Affairs, Department of Defense; 2006 Dec. 140 p.

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AREAS OF AGREEMENT AND DIFFERENCE

A direct comparison of the recommendations presented in the above guidelines for lipid screening in adults is provided in the tables below.

Areas of Agreement

Screening in Men

All three groups recommend that all men aged 35 and older, regardless of risk level, be screened for lipid disorders. There is also agreement that men younger

than 35 (UMHS and USPSTF specify age 20 to 35) at increased risk for CHD should be screened.

Screening Frequency

Recommendations regarding screening frequency are similar. UMHS and VA/DoD recommend repeat screening of patients at average or below-average risk every 5 years, and more frequently for patients with risk factors. USPSTF similarly states that the optimal interval for screening is uncertain, but that reasonable options include every 5 years, with shorter intervals for people who have lipid levels close to warranting therapy, and longer intervals for those not at increased risk who have had repeatedly normal lipid levels. VA/DoD also explicitly recommends annual screening for middle aged adults (men $\geq$ age 35; women $\geq$ age 45) if CVD risk factors exist.

Assessment of Risk Factors

There is overall agreement that patients screened for dyslipidemia should be assessed for risk factors. Risk factors cited by all three groups include tobacco use/cigarette smoking, diabetes, hypertension (defined as BP $\geq$ 140/90 mm Hg or currently on antihypertensive medication by UMHS and VA/DoD), and a family history of premature cardiovascular disease. UMHS and VA/DoD also cite low HDL cholesterol (< 40 mg/dL) and age (men $\geq$ 45 years: women $\geq$ 55 years). USPSTF cites obesity (BMI > 30) and a previous personal history of CHD or non-coronary atherosclerosis.

Areas of Difference

Screening in Women

UMHS and USPSTF only recommend screening in women age 20 and older **at increased risk for CHD**. While VA/DoD also recommends screening of younger women at increased risk, they also recommend routine screening of women older than 45 at average risk. UMHS and USPSTF make no recommendation for or against screening in women aged 20 and older who are not at increased risk for CHD.

Screening Test

Recommendations regarding which screening tests should be performed differ. According to USPSTF, the preferred screening tests are TC and HDL-C on fasting or non-fasting samples. They add that there is currently insufficient evidence of the benefit of including TG as a part of the initial tests used to screen routinely for dyslipidemia. VA/DoD, in contrast to USPSTF, recommends screening on a fasting sample for TG (in order to calculate LDL-C) in addition to TC and HDL-C. VA/DoD notes that, in recommending measurement of LDL-C for screening purposes, its current recommendation differs from its previous (1999) statement. UMHS recommends screening with a fasting lipid profile, but if screened non-fasting for patient convenience, they recommend follow-up on abnormal non-fasting lipids with a fasting lipid profile. With regard to which lipids to measure, they state that LDL-C is typically measured indirectly in a lipid panel. They add that the indirect measure is less accurate if TG > 400 mg/dl, so most laboratories also perform a direct LDL-C if TG > 400 mg/dl.

COMPARISON OF RECOMMENDATIONS	
WHOM TO SCREEN **Abbreviations** **Back to TOC**	
UMHS (2009)	**Key Points** **Primary Prevention** Screening. Screen men age 35 and older and age 20 to 35 if at increased risk for CHD. Screen women only if at increased risk for CHD. *[IC*]* **Overview of Primary Prevention** 1. **Candidates**. Confirm appropriate for primary prevention • Men age 35 and older; age 20 to 35 if increased risk for CHD • Women age 20 and older if increased risk for CHD For candidates, go to next step. Target population. The age group for screening for primary prevention remains an area of controversy. National organizations have different age recommendations for screening (see Table 8 in the original guideline document). Some groups have argued for screening at age 20, because atherosclerosis begins long before clinical manifestations. Others have argued that there is no evidence that screening or treating young adults has not shown to be of benefit, and given their low absolute risk, would not be cost effective. Most guidelines have agreed there is good evidence for screening men aged 35 to 65. The optimal age for screening women is unknown, but relative to men they generally have a lower overall risk and a 10-year delay in relative risk. Epidemiologic studies indicate the risks of high cholesterol extend to age 75, though little trial data exist for this older age group. Screening for lipid disorders, like other primary prevention efforts, may not be appropriate in individual patients with reduced life expectancy. USPSTF performed the most recent evidence review and this guideline incorporates its assessment that for screening and

	treating lipid disorders: • Benefits substantially outweigh potential harms for all men age 35 and older and for women age 45 and older at increased risk for CHD. • Benefits moderately outweigh potential harms for younger adults (men age 20 to 35 and women age 20 to 45) at increased risk for CHD.
USPSTF (2008)	*Screening Men* The USPSTF strongly recommends screening men aged 35 and older for lipid disorders. **This is a grade A recommendation**. The USPSTF recommends screening men aged 20 to 35 for lipid disorders if they are at increased risk for CHD. **This is a grade B recommendation**. *Screening Women at Increased Risk* The USPSTF strongly recommends screening women aged 45 and older for lipid disorders if they are at increased risk for CHD. **This is a grade A recommendation**. The USPSTF recommends screening women aged 20 to 45 for lipid disorders if they are at increased risk for CHD. **This is a grade B recommendation**. *Screening of Young Men and All Women Not at Increased Risk* The USPSTF makes no recommendation for or against routine screening for lipid disorders in men aged 20 to 35, or in women aged 20 and older who are not at increased risk for CHD. **This is a grade C recommendation**. **Clinical Considerations** • An age to stop screening has not been established. Screening may be appropriate in older people who have never been screened; repeated screening is less important in older people because lipid levels are less likely to increase after age 65. However, because older adults have an increased baseline risk for coronary heart disease, they stand to gain greater absolute benefit from the treatment of dyslipidemia, compared with younger adults.
VA/DoD	Targeted lipid screening is only recommended for men $\geq$ age 35

(2006)	and women ≥ age 45. There is evidence to support screening in younger patients when other risk factors are present. There is clinical and epidemiological evidence to continue screening until age 75 for primary prevention. There is some disagreement, however, as to the efficacy of screening beyond the age of 75. The USPSTF has not established an age at which to stop screening for primary prevention, and therefore, screening beyond age 75 should be left to clinical considerations. **Lipid Screening Criteria** a. Male age 35 or older OR female age 45 or older b. Young adults with more than one of the following: • Family history of premature CVD • Patient is smoking • Patient has or is being treated for hypertension c. Consider obtaining lipid profile for young adults with abdominal obesity **Recommendations** • Fasting lipid profile testing should be obtained in all men age 35 and older and women age 45 years or older every 5 years. **[A]** • Fasting lipid profile testing should be obtained in individuals with a family history or clinical evidence of familial hyperlipidemia. • Fasting lipid profile testing in young adults may be considered depending upon the association with other risk factors. Younger adults (men younger than age 35 and women age 45 or younger) should be screened for lipid disorders if they have one or more of the following risk factors: family history of premature CVD, hypertension (or under treatment for hypertension), or smoking. **[B]** • A lipid profile should be obtained for individuals with abdominal obesity (waist circumference > 40 inches in men and > 35 inches in women) to aid in assessment of metabolic syndrome. **[B]** • Elderly patients age 75 or older should be screened if they have multiple CVD risk factors, or a history of CVD and good quality of life with no other major life-limiting diseases. **[I]** (Working Group Consensus)

SCREENING TEST
Abbreviations
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UMHS (2009)	**Key Points** **Primary Prevention** Screening Screening with fasting lipid profile is advised. If screened non-fasting for patient convenience, follow-up on abnormal non-fasting lipids with a fasting lipid profile. **Clinical Considerations** Lipid measures. When ordering screening lipids, which tests should be requested? A fasting lipid panel is advised. For patient convenience a non-fasting screen may be initially performed, but abnormal non-fasting screening lipids (i.e., TC > 200 mg/dl, or an HDL-C < 40 mg/dl) should go on to have a fasting lipid panel. LDL-C is typically measured indirectly in a lipid panel. The indirect measure is less accurate if TG > 400 mg/dl, so most laboratories also perform a direct LDL-C if TG > 400 mg/dl. Patients with normal screening lipids are generally rechecked at 5-year intervals, as lipids may gradually worsen over time and they may develop secondary causes later in life. Patients with borderline values, not requiring therapy, may be rechecked at 1-2 year intervals. Non-HDL-C is a secondary measure in patients with elevated triglycerides. It is the sum of LDL-C and VLDL-C, or TC minus HDL-C. Non-HDL-C goals are 30 mg/dl higher than LDL-C goals, and have been shown to be a better predictor of CHD risk than LDL-C. This would be expected, because it includes LDL-C and other atherogenic lipoproteins.
USPSTF (2008)	**Clinical Considerations** • The preferred screening tests for dyslipidemia are TC and HDL-C on non-fasting or fasting samples. There is currently insufficient evidence of the benefit of including TG as a part of the initial tests used to screen routinely for dyslipidemia. Abnormal screening test results should be confirmed by a repeated sample on a separate occasion, and the average of both results should be used for risk assessment. • Measuring TC alone is acceptable for screening if available laboratory services cannot provide reliable measurements of HDL-C; measuring both TC and HDL-C is more sensitive and specific for assessing CHD risk than measuring TC alone. In conjunction with HDL-C, the addition of either LDL-C or TC

	would provide comparable information, but measuring LDL-C requires a fasting sample and is more expensive. Direct LDL-C testing, which does not require a fasting sample measurement, is now available; however, calculated LDL (TC minus HDL minus TG/5) is the validated measurement used in trials for risk assessment and treatment decisions. In patients with dyslipidemia identified by screening, complete lipoprotein analysis is useful.
VA/DoD (2006)	**Obtain a Fasting Lipid Profile** Lipid levels are preferably obtained in a fasting state. However, if the testing opportunity is nonfasting, only the values for TC and HDL will be usable. In otherwise low-risk person (0 to 1 risk factor), further testing is not required if the HDL-C level is > 40 mg/dL and TC is < 200 mg/dL. For persons with multiple (2+) risk factors, LDL-C levels are needed as a guide to clinical management. *Lipid Screening Test* • Ensure test is obtained in fasting state (9 to 14 hour fast). • TC, TG, and HDL-C are measured directly. • LDL-C is calculated; therefore, TG level should be considered. **Recommendations** • A complete fasting lipid profile should be obtained in an individual with other risk factors for coronary disease. **[A]** • Clinical decisions should be based upon lipid profiles done 1 to 8 weeks apart (fasting) with an LDL-C or TC difference of < 30 mg/dL. **[I]** (Working Group Consensus) • Lipid profiles should not be obtained within 8 weeks of acute hospitalization, surgery, trauma, or infection unless they are obtained within 12 to 24 hours of the event to ensure accuracy. **[I]** (Working Group Consensus) • Lipid profiles should not be measured in pregnant women until three to four months post partum. **[I]** (Working Group Consensus) • In the previous VA/DoD guideline for dyslipidemia (1999), initial classification for primary prevention was based on measurement of TC and HDL-C. This guideline recommends measurement of LDL-C for screening purposes. This measurement requires a fasting lipid analysis that includes TC, HDL-C, TG and estimation of LDL-C.

UMHS (2009)	**Key Points** **Primary Prevention** Risk. See below for risk factors. Determination of risk can be facilitated by using the Framingham based Global Risk Score, which predicts 10 year risk of a coronary event *[C]*. **Major CHD Risk Factors other than LDL-C*** • Cigarette smoking • Hypertension (blood pressure ≥ 140/90 mm Hg or on antihypertensive medication) • Low HDL cholesterol (< 40 mg/dl)** ADA recognizes low HDL cholesterol < 50 mg/dL in women • Family history of premature CHD (CHD in first-degree relative: male < 55 years or female < 65 years) • Age (men ≥ 45 years: women ≥ 55 years) **Note**: Framingham 10-Year Risk Score can be calculated at: http://hp2010.nhlbihin.net/atpiii/calculator.asp?usertype=prof. *Diabetes is regarded as a CHD risk equivalent. See Table 5 in the original guideline document, footnote "d" for other medical conditions that are CHD risk equivalents. ** HDL cholesterol ≥ 60 mg/dl counts as a "negative" risk factor; its presence removes 1 risk factor from the total count.

USPSTF (2008)	**Clinical Considerations**
	
	• Increased risk, for the purposes of this recommendation, is defined by the presence of any one of the risk factors listed below. The greatest risk for CHD is conferred by a combination of multiple listed factors. While the USPSTF did not use a specific numerical risk to bound this recommendation, the framework used by the USPSTF in making these recommendations relies on a 10-year risk of cardiovascular events:
	  • Diabetes
	  • Previous personal history of CHD or non-coronary atherosclerosis (e.g., abdominal aortic aneurysm, peripheral artery disease, carotid artery stenosis)
	  • A family history of cardiovascular disease before age 50 in male relatives or age 60 in female relatives
	  • Tobacco use
	  • Hypertension
	  • Obesity (BMI > 30)

VA/DoD (2006)	**Assess Risk Factors for Cardiovascular Disease**

	1. Patients screened for dyslipidemia should be assessed for risk factors for CVD. Assessment should include, but not be limited to, the following: a. Age (males ≥ age 45 and females ≥ age 55) b. Family history of premature coronary artery disease; definite myocardial infarction (MI) or sudden death before age 55 in father or other male first-degree relative, or before age 65 in mother or other female first-degree relative c. Current tobacco use/cigarette smoking (or within the last month) d. Hypertension (systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg confirmed on more than one occasion, or current therapy with anti-hypertensive medications) e. Diabetes mellitus (elevated fasting blood sugar [≥ 126 mg/dL], or a random blood sugar [≥ 200 mg/dL] confirmed on more than one occasion, an abnormal glucose tolerance test or current therapy with anti-diabetic medications) f. Level of HDL-C (less than 40 mg/dL confirmed on more than one occasion) 2. In obese patients (BMI ≥ 30), waist circumference measurement should be obtained to assist in the diagnosis of metabolic syndrome.
SCREENING FREQUENCY **Abbreviations** **Back to TOC**	
UMHS (2009)	**Key Points** **Primary Prevention** Screening Repeat screening in 5 years in patients with normal lipids [*IID**]. **Clinical Considerations** Lipid Measures Patients with normal screening lipids are generally rechecked at 5-year intervals, as lipids may gradually worsen over time and they may develop secondary causes later in life. Patients with borderline values, not requiring therapy, may be rechecked at 1-2 year intervals.
USPSTF (2008)	**Clinical Considerations**

	• The optimal interval for screening is uncertain. On the basis of other guidelines and expert opinion, reasonable options include every 5 years, shorter intervals for people who have lipid levels close to those warranting therapy, and longer intervals for those not at increased risk who have had repeatedly normal lipid levels.
VA/DoD (2006)	**Repeat Dyslipidemia Evaluation in 1 to 5 Years** • Patients with average or below average risk for atherosclerotic events should be screened for dyslipidemia every five years. **[B]** • If the initial dyslipidemia screening reveals TC >200 mg/dL, or fasting LDL-C >130 mg/dL or HDL-C <40 mg/dL, but LDL-C level is under the recommended goal level based upon cardiovascular risk, the patient will be at low-risk for lipid-related events over a one to two-year period and thus, should be reevaluated for dyslipidemia in one to two years. **Recommended Screening Schedules for Dyslipidemia** *For Young Adults (men <age 35; women <age 45)* • Every 5 years when no CVD risk factors are present • More often, if family history of premature CVD exists (definite myocardial infarction or sudden death before 55 years of age in father or other male first-degree relative or before age 65 in mother or other female first-degree relative) *For Middle-aged Adults (men >age 35; women >age 45)* • Every 5 years, when no CVD risk factors are present • Annually, if CVD risk factors exist (hypertension, smoking, family history of premature CVD) *For Elderly Patients Up to Age 75 Years* • Every 5 years when no CVD risk factors are present • More often if CVD risk factors exist *For Elderly Patients >Age 75* • Evaluate if patient has multiple CVD risk factors, established CVD, or a history of revascularization procedures and good quality of life with no other major life-limiting diseases.

STRENGTH OF EVIDENCE AND RECOMMENDATION GRADING SCHEMES

Abbreviations
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UMHS (2009)

Strength of Recommendation

I = Generally should be performed

II = May be reasonable to perform

III = Generally should not be performed

Levels of Evidence

*Levels of evidence reflect the best available literature in support of an intervention or test:

A. Randomized controlled trials
B. Controlled trials, no randomization
C. Observational trials
D. Opinion of expert panel

USPSTF (2008)

What the United States Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice
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 moderate or high certainty that the net benefit is small.	Offer or provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty	Discourage the use of this service.

	that the service has no net benefit or that the harms outweigh the benefits.	
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 "Clinical Considerations" section of USPSTF Recommendation Statement (see "Major Recommendations" field). If this service is offered, patients should understand the uncertainty about the balance of benefits and harms.

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The U.S. Preventive Services Task Force defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as: • The number, size, or quality of individual studies • Inconsistency of findings across individual studies • Limited generalizability of findings to routine primary care practice • Lack of coherence in the chain of evidence As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: • The limited number or size of studies • Important flaws in study design or methods

	• Inconsistency of findings across individual studies • Gaps in the chain of evidence • Findings not generalizable to routine primary care practice • A lack of information on important health outcomes More information may allow an estimation of effects on health outcomes.

VA/DoD (2006)

A: A strong recommendation that the clinicians provide the intervention to eligible patients.
Good evidence was found that the intervention improves important health outcomes and concludes that benefits substantially outweigh harm.

B: A recommendation that clinicians provide (the service) to eligible patients.
At least fair evidence was found that the intervention improves health outcomes and concludes that benefits outweigh harm.

C: No recommendation for or against the routine provision of the intervention is made.
At least fair evidence was found that the intervention can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.

D: Recommendation is made against routinely providing the intervention to asymptomatic patients.
At least fair evidence was found that the intervention is ineffective or that harms outweigh benefits.

I: The conclusion is that the evidence is insufficient to recommend for or against routinely providing the intervention.
Evidence that the intervention is effective is lacking, or poor quality, or conflicting and the balance of benefits and harms cannot be determined.

	Net Benefit of the Intervention			
Quality of Evidence	**Substantial**	**Moderate**	**Small**	**Zero or Negative**
Good	A	B	C	D
Fair	B	B	C	D
Poor	I	I	I	I

Quality of Evidence

I: At least one properly done randomized controlled trial

II-1: Well designed controlled trails without randomization

II-2: Well designed cohort or case-control analytic study, preferably from more than one source

II-3: Multiple time series evidence with/without intervention; dramatic results of uncontrolled experiment

III: Opinion of respected authorities, descriptive studies, case reports, and expert committees

Overall Quality

Good: High grade evidence (I or II-1) directly linked to health outcome

Fair: High grade evidence (I or II-1) linked to intermediate outcome; or moderate grade evidence (II-2 or II-3) directly linked to health outcome

Poor: Level III evidence or no linkage of evidence to health outcome

Net Effect of Intervention

Substantial:

- More than a small relative impact on a frequent condition with a substantial burden of suffering, *or*
- A large impact on an infrequent condition with a significant impact on the individual patient level

Moderate:

- A small relative impact on a frequent condition with a substantial burden of suffering, *or*
- A moderate impact on an infrequent condition with a significant impact on the individual patient level

Small:

- A negligible relative impact on a frequent condition with a substantial burden of suffering, *or*
- A small impact on an infrequent condition with a significant impact on the individual patient level

Zero or Negative:

- Negative impact on patients, *or*
- No relative impact on either a frequent condition with a substantial burden of suffering, *or*
- An infrequent condition with a significant impact on the individual

	patient level

COMPARISON OF METHODOLOGY *Click on the links below for details of guideline development methodology*		
UMHS (2009)	**USPSTF (2008)**	**VA/DoD (2006)**
To collect and select the evidence all three groups performed hand-searches of published literature (UMHS searched primary sources; USPSTF and VA/DoD searched both primary and secondary) as well as searches of electronic databases. UMHS also searched unpublished data. A selective review of the literature was prepared by Oregon Evidence-based Practice Center (EPC) for use by the USPSTF in the development of its guideline. All three guidelines provide details regarding the literature search, including the specific databases searched, time frames applied, and search terms used. To assess the quality and strength of the evidence, UMHS and VA/DoD weighted it according to a rating scheme and provide the scheme. USPSTF employed expert consensus. Methods used to analyze the evidence were similar, with all three groups having performed a review of published meta-analyses and a systematic review. The USPSTF and VA/DoD systematic reviews incorporated evidence tables. All three groups provide a description of the evidence analysis process. With regard to formulation of recommendations, all three groups utilized expert consensus; USPSTF also employed balance sheets. The USPSTF and VA/DoD provide a description of the process. All three groups graded the strength of the recommendations according to a rating scheme and provide the scheme. To validate their guidelines all three groups used internal peer review. USPSTF also sought external peer review and compared its guideline with those of other groups.		

SOURCE(S) OF FUNDING Abbreviations Back to TOC	
UMHS (2009)	University of Michigan Health System
USPSTF (2008)	United States Government
VA/DoD	United States Government

(2006)	

BENEFITS AND HARMS **Abbreviations** **Back to TOC**	
Benefits	
UMHS (2009)	Appropriate screening and management of lipids in order to prevent coronary heart disease and stroke
USPSTF (2008)	**Benefits of Detection and Early Treatment** There is good evidence that lipid-lowering drug therapy substantially decreases the incidence of coronary heart disease in persons with abnormal lipids. The absolute benefits of lipid-lowering treatment depend on a person's underlying risk for coronary heart disease. Men over the age of 35 and women over the age of 45 who are at increased risk will realize a substantial benefit from treatment; younger adults with multiple risk factors for coronary disease, including dyslipidemia, will realize a moderate benefit from treatment; and younger men and women without risk factors for coronary heart disease will realize a small benefit from treatment, as seen in the risk reduction in 10-year CHD event rate.
VA/DoD (2006)	Dyslipidemia is a major risk factor for coronary heart disease and atherosclerotic cardiovascular disease and its subsequent morbidity and mortality. Lipid-related interventions, including lifestyle modifications, such as diet and exercise, and drug therapy can reduce the risk of atherosclerotic cardiovascular disease in patients with high cholesterol.
Harms	
UMHS (2009)	No screening-related harms are provided.
USPSTF (2008)	**Harms of Detection and Early Treatment** There is good evidence that the harms from screening and treatment are small and include possible labeling and the adverse effects associated with lipid-lowering therapy (e.g., rhabdomyolysis).
VA/DoD (2006)	No screening-related harms are provided.

Abbreviations
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ATP, Adult Treatment Panel

BMI, body mass index

BP, blood pressure

CHD, coronary heart disease

CVD, cardiovascular disease

DM, diabetes mellitus

HDL, high-density lipoprotein

LDL, low-density lipoprotein

NCEP, National Cholesterol Education Program

TC, total cholesterol

TG, triglycerides

UMHS, University of Michigan Health System

USPSTF, United States Preventive Services Task Force

VA/DoD, Department of Veterans Affairs, Department of Defense

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This synthesis was prepared by NGC on July 28, 2000. It was reviewed by the guideline developers as of October 10, 2000. This synthesis was revised in November 2008 to remove NHLBI recommendations and to add USPSTF recommendations. This synthesis was verified by USPSTF on December 29, 2008. This synthesis was revised most recently in January 2010 to add UMHS recommendations. The information was verified by UMHS on February 2, 2010.

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