

# Practice Guidelines

## Cholesterol Management: ACC/AHA Updates Guideline

### Key Points for Practice

- A nonfasting plasma lipid profile can be obtained to estimate ASCVD risk and document baseline LDL-C in adults 20 years and older who are not on lipid-lowering therapy.
- Maximally tolerated statin therapy is recommended for patients 20 to 75 years of age with an LDL-C level of 190 mg per dL or greater.
- Moderate-intensity statin therapy should be initiated without calculating a 10-year ASCVD risk for patients 40 to 75 years of age with diabetes mellitus.
- Patients without diabetes at intermediate risk of ASCVD with LDL-C levels of 70 to 189 mg per dL should be treated with a moderate-intensity statin for a goal of 30% or greater reduction in LDL-C levels.

From the *AFP* Editors

**The American College** of Cardiology/American Heart Association (ACC/AHA) task force on clinical practice guidelines has updated its 2013 cholesterol guideline. The 2018 guideline narrows the use of the atherosclerotic cardiovascular disease (ASCVD) risk calculator, provides more guidance on the use of risk-enhancing factors in making statin therapy decisions, and recommends therapy options for achieving low-density lipoprotein cholesterol (LDL-C) targets. The updated guideline also includes recommendations for

nonstatin lipid-lowering agents that can be used as statin add-ons to meet recommended LDL-C thresholds. A cornerstone of the guideline is to emphasize a heart-healthy lifestyle for all patients. A healthy lifestyle reduces ASCVD risk at all ages and can reduce the development of risk factors in younger patients.

### Selected Strong Recommendations

#### MEASURING BLOOD CHOLESTEROL

Based on moderate-quality evidence from non-randomized trials, measuring fasting or nonfasting plasma lipid levels is effective in estimating ASCVD risk and documenting baseline LDL-C in adults 20 years and older who are not on lipid-lowering therapy. When an initial nonfasting lipid profile reveals a triglyceride level of 400 mg per dL (4.5 mmol per L) or greater, a repeat lipid profile should be obtained to assess fasting triglyceride and baseline LDL-C levels in adults 20 years and older.

#### SECONDARY PREVENTION

Based on high-quality evidence from randomized controlled trials (RCTs), high-intensity statin therapy should be instituted with a goal of lowering LDL-C levels by 50% or more in patients with ASCVD up to 75 years of age. If treatment is not tolerated, then moderate-intensity therapy should be used with a goal of achieving a 30% to 49% reduction in LDL-C levels. Based on non-randomized trials, patients at very high risk (history of multiple ASCVD events or one event with multiple high-risk comorbidities) should be considered for treatment with maximally tolerated statin doses and ezetimibe (Zetia) before considering the addition of a proprotein convertase subtilisin/kexin type 9 inhibitor.

#### SEVERE HYPERCHOLESTEROLEMIA

Based on moderate-quality evidence from RCTs, maximally tolerated statin therapy is recommended for patients 20 to 75 years of age with an LDL-C level of 190 mg per dL (4.92 mmol per L) or greater.

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**This series** is coordinated by Sumi Sexton, MD, Editor-in-Chief.

**A collection of** Practice Guidelines published in *AFP* is available at <https://www.aafp.org/aafp/practguide>.

**CME** This clinical content conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 541.

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**DIABETES MELLITUS**

Based on high-quality evidence from RCTs, moderate-intensity statin therapy should be initiated without calculating a 10-year ASCVD risk for all patients 40 to 75 years of age with diabetes mellitus.

**PRIMARY PREVENTION**

Moderate-quality evidence from nonrandomized studies recommends estimating the 10-year ASCVD risk of a first fatal or nonfatal myocardial infarction or stroke by using the race and sex-specific pooled cohort equations. Patients should then be categorized as low (less than 5%), borderline (5% to 7.4%), intermediate (7.5% to 19.9%), or high (20% or greater) risk. High-quality evidence from RCTs recommends that patients 40 to 75 years of age without diabetes who are at intermediate risk with LDL-C levels of 70 to 189 mg per dL (1.81 to 4.90 mmol per L) should be treated with a moderate-intensity statin. A 30% or greater reduction in LDL-C levels is recommended, and in high-risk patients a 50% or greater reduction is recommended.

The physician and patient should discuss risk factors before starting statin therapy. The conversation should include major risk factors such as cigarette smoking, elevated blood pressure, LDL-C levels, A1C (if indicated), and calculated 10-year risk of ASCVD; the presence of risk-enhancing factors; the potential benefits of lifestyle and statin therapies; the potential for adverse effects and drug-drug interactions; cost of therapy; and patient preferences and values in shared decision-making.

Risk-enhancing factors include a family history of premature ASCVD; persistently elevated LDL-C levels of 160 mg per dL (4.14 mmol per L) or greater; metabolic syndrome; chronic kidney disease; history of preeclampsia or premature menopause (younger than 40 years); chronic inflammatory disorders (e.g., rheumatoid arthritis, psoriasis, chronic HIV infection); high-risk ethnic groups (e.g., south Asian descent); persistent triglyceride levels of 175 mg per dL (2.0 mmol per L) or greater; and, if measured in selected individuals, an apolipoprotein B level of 130 mg per dL (1.3 g per L) or greater, high-sensitivity C-reactive protein level of 2.0 mg per L (19.05 nmol per L) or greater, an ankle-brachial index less than 0.9, and lipoprotein (a) level of 50 mg per dL (1.79  $\mu$ mol per L) or greater, especially at higher values of lipoprotein (a).

**MONITORING RESPONSE TO THERAPY**

Based on high-quality RCTs, fasting lipid measurement should be repeated four to 12 weeks after starting the statin or making a dose adjustment to assess adherence and response to LDL-C-lowering medications and lifestyle changes. Following that, lipid measurement should be repeated every three to 12 months as needed.

**Selected Moderate-Strength Recommendations**

Based on moderate-quality evidence from RCTs, the addition of nonstatin drug therapy should be considered at a threshold LDL-C level of at least 70 mg per dL on maximal statin therapy in patients with ASCVD at very high risk. Also, it may be beneficial to treat patients 20 to 75 years of age who have an LDL-C level of 190 mg per dL or greater with ezetimibe if they have not been able to achieve a 50% reduction in LDL-C level while receiving maximally tolerated statin therapy and/or still have an LDL-C level of at least 100 mg per dL (2.59 mmol per L).

Based on moderate-quality evidence from nonrandomized studies, the 10-year risk of a first ASCVD event can be assessed in patients 40 to 75 years of age with diabetes and an LDL-C level of 70 to 189 mg per dL. Patients with diabetes who have multiple ASCVD risk factors should be treated with high-intensity statin therapy with a goal of reducing LDL-C levels by 50% or more, according to data from RCTs.

Moderate-quality evidence from RCTs recommends that patients 40 to 75 years without diabetes who have a 10-year risk of 7.5% to 19.9% and risk-enhancing factors start or intensify statin therapy.

Based on moderate-quality evidence from nonrandomized trials, it is reasonable to obtain a coronary artery calcium (CAC) score for patients 40 to 75 years of age with an LDL-C level of 70 to 189 mg per dL and a 10-year ASCVD risk of 7.5% to 19.9% if a decision about statin therapy is uncertain. If the CAC score is zero, statin therapy should be withheld or delayed unless the patient is a cigarette smoker, has diabetes, or has a strong family history of premature ASCVD. A CAC score of 1 to 99 suggests statin therapy, particularly for patients 55 years and older. If the CAC score is 100 or greater or in the 75th percentile or greater, statin therapy is indicated for any patient unless otherwise deferred by the outcome of the physician-patient risk discussion.

## PRACTICE GUIDELINES

**Editor's Note:** Similar to the 2013 ACC/AHA cholesterol guideline, this guideline has some utility for family physicians but is limited by several recommendations that will be challenging to implement and lack patient-oriented evidence. For example, the guideline recommends periodic lipid monitoring in patients receiving therapy, even though randomized trials generally prescribed fixed statin doses rather than titrating to LDL-C percentage reductions or threshold levels. It encourages the expanded use of CAC scoring to guide the decision to start statin therapy, even though no studies have shown that risk stratification based on CAC score reduces cardiovascular morbidity or mortality more than traditional risk factors alone. Finally, the ACC/AHA did not update the Pooled Cohort Equations risk assessment tool, despite widespread recognition that it can significantly overestimate 10-year risk of myocardial infarction and stroke. Given the imprecision in risk estimates, eliciting patients' values and preferences regarding the potential benefits and harms of statins and other lipid-lowering agents remains essential to treatment decisions.—Kenny Lin, MD, MPH, AAFP Deputy Editor

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**Lindsey Hoover**  
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