2007 Chronic Angina Focused Update of the ACC/AHA 2002 Guidelines for the Management of Patients With Chronic Stable Angina

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients With Chronic Stable Angina

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This document is a limited update to the 2002 guideline update and is based on a review of certain evidence, not a full literature review.

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Preamble

A primary challenge in the development of clinical practice guidelines is keeping pace with the stream of new data upon which recommendations are based. In an effort to respond more quickly to new evidence, the American College of Cardiology/American Heart Association (ACC/AHA) Task Force on Practice Guidelines has created a new "focused update" process to revise the existing guideline recommendations that are affected by the evolving data or opinion. Prior to the initiation of this focused approach, periodic updates and revisions of existing guidelines required up to 3 years to complete. Now, however, new evidence will be reviewed in an ongoing fashion to more efficiently respond to important science and treatment trends that could have a major impact on patient outcomes and quality of care. Evidence will be reviewed at least twice a year and updates will be initiated on an as-needed basis as quickly as possible, while maintaining the rigorous methodology that the ACC and AHA have developed during their more than 20 years of partnership.

These updated guideline recommendations reflect a consensus of expert opinion after a thorough review primarily of late-breaking clinical trials identified through a broad-based vetting process as being important to the relevant patient population, and of other new data deemed to have an impact on patient care (see Section 1.1 Evidence Review for details regarding this focused update). It is important to note that this focused update is not intended to represent an update based on a full literature review from the date of the previous guideline publication. Specific criteria/considerations for inclusion of new data include:

- Publication in a peer-reviewed journal
- Large, randomized, placebo-controlled trial(s)
- Nonrandomized data deemed important on the basis of results impacting current safety and efficacy assumptions
- Strengths/weakness of research methodology and findings
- Likelihood of additional studies influencing current findings
- Impact on current performance measure(s) and/or likelihood of need to develop new performance measure(s)
- Requests and requirements for review and update from the practice community, key stakeholders, and other sources free of relationships with industry or other potential bias
- Number of previous trials showing consistent results
- Need for consistency with a new guideline or guideline revision

In analyzing the data and developing updated recommendations and supporting text, the Focused Update Writing Group used evidence-based methodologies developed by the ACC/AHA Task Force on Practice Guidelines that are described elsewhere (1,2). The schema for class of recommendation and level of evidence is summarized in Table 1, which also illustrates how the grading system provides an estimate of the size of the treatment effect and an estimate of the certainty of the treatment effect. Note that a recommendation with level of evidence B or C does not imply that the recommendation is weak. Many important clinical questions addressed in guidelines do not lend themselves to clinical trials. Although randomized trials may not be available, there may be a very clear clinical consensus that a particular test or therapy is useful and effective. Both the class of recommendation and the level of evidence listed in the focused updates are based on consideration of the evidence reviewed in previous iterations of the guideline, as well as the focused update. Of note, the implications of older studies that have informed recommendations but have not been repeated in contemporary settings are carefully considered.

The ACC/AHA practice guidelines address patient populations (and healthcare providers) residing in North America. As such, drugs that are not currently available in North America are discussed in the text without a specific class of recommendation. For studies performed in large numbers of subjects outside of North America, each writing committee reviews the potential impact of different practice patterns and patient populations on the treatment effect and on the relevance to the ACC/AHA target population to determine whether the findings should inform a specific recommendation.

The ACC/AHA practice guidelines are intended to assist healthcare providers in clinical decision making by describing a range of generally acceptable approaches for the diagnosis, management, and prevention of specific diseases or conditions. They attempt to define practices that meet the needs of most patients in most circumstances. The ultimate judgment regarding care of a particular patient must be made by the healthcare provider and patient in light of all the circumstances presented by that patient. Thus, there are circumstances in which deviations from these guidelines may be appropriate. Clinical decision making should consider the quality and availability of expertise in the area where care is provided. These guidelines may be used as the basis for regulatory or payer decisions, but the ultimate goal is quality of care and serving the patient's best interests.

Prescribed courses of treatment in accordance with these recommendations are only effective if they are followed by the patient. Because lack of patient adherence may adversely affect treatment outcomes, healthcare providers should make every effort to engage the patient in active participation with prescribed treatment.

The ACC/AHA Task Force on Practice Guidelines makes every effort to avoid any actual, potential, or perceived conflict of interest arising from industry relationships or personal interests of a writing committee member. All writing committee members and peer reviewers were required to provide disclosure statements of all such relationships pertaining to the trials and other evidence under consideration (see Appendixes 1 and 2). Final recommendations were balloted to all writing committee members. Writing committee members with significant (greater than $10 000) relevant relationships with industry were required to recuse themselves from voting on that recommendation. Those writing committee members who did not participate are not listed as authors of this focused update.

With the exception of the recommendations presented here, the full guideline remains current. Only the recommendations from the affected sections of the full guideline are included in this focused update. For easy reference, all recommendations from any section of a guideline impacted by a change are presented with notation as to whether they remain current, are new, or have been modified. When

Table 1. Applying Classification of Recommendations and Level of Evidence†

SIZE OF TREATMENT EFFECT →

ESTIMATE OF CERTAINTY (PRECISION) OF TREATMENT EFFECT	CLASS I *Benefit >>> Risk* Procedure/Treatment **SHOULD** be performed/ administered	CLASS IIa *Benefit >> Risk* *Additional studies with focused objectives needed* **IT IS REASONABLE** to perform procedure/administer treatment	CLASS IIb *Benefit ≥ Risk* *Additional studies with broad objectives needed; additional registry data would be helpful* Procedure/Treatment **MAY BE CONSIDERED**	CLASS III *Risk ≥ Benefit* *No additional studies needed* Procedure/Treatment should **NOT** be performed/administered **SINCE IT IS NOT HELPFUL AND MAY BE HARMFUL**
LEVEL A Multiple (3-5) population risk strata evaluated* General consistency of direction and magnitude of effect	■ Recommendation that procedure or treatment is useful/effective ■ Sufficient evidence from multiple randomized trials or meta-analyses	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Sufficient evidence from multiple randomized trials or meta-analyses
LEVEL B Limited (2-3) population risk strata evaluated*	■ Recommendation that procedure or treatment is useful/effective ■ Limited evidence from single randomized trial or nonrandomized studies	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Limited evidence from single randomized trial or nonrandomized studies
LEVEL C Very limited (1-2) population risk strata evaluated*	■ Recommendation that procedure or treatment is useful/effective ■ Only expert opinion, case studies, or standard-of-care	■ Recommendation in favor of treatment or procedure being useful/effective ■ Only diverging expert opinion, case studies, or standard-of-care	■ Recommendation's usefulness/efficacy less well established ■ Only diverging expert opinion, case studies, or standard-of-care	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Only expert opinion, case studies, or standard-of-care
Suggested phrases for writing recommendations†	should is recommended is indicated is useful/effective/beneficial	is reasonable can be useful/effective/beneficial is probably recommended or indicated	may/might be considered may/might be reasonable usefulness/effectiveness is unknown/unclear/uncertain or not well established	is not recommended is not indicated should not is not useful/effective/beneficial may be harmful

*Data available from clinical trials or registries about the usefulness/efficacy in different subpopulations, such as gender, age, history of diabetes, history of prior myocardial infarction, history of heart failure, and prior aspirin use. A recommendation with Level of Evidence B or C does not imply that the recommendation is weak. Many important clinical questions addressed in the guidelines do not lend themselves to clinical trials. Even though randomized trials are not available, there may be a very clear clinical consensus that a particular test or therapy is useful or effective.

†In 2003, the ACC/AHA Task Force on Practice Guidelines developed a list of suggested phrases to use when writing recommendations. All guideline recommendations have been written in full sentences that express a complete thought, such that a recommendation, even if separated and presented apart from the rest of the document (including headings above sets of recommendations), would still convey the full intent of the recommendation. It is hoped that this will increase readers' comprehension of the guidelines and will allow queries at the individual recommendation level.

evidence impacts recommendations in more than 1 guideline, those guidelines are updated concurrently.

The recommendations in this focused update will be considered current until they are superseded by another focused update or until the full-text guidelines are revised. This focused update is published in the December 4, 2007, issue of the *Journal of the American College of Cardiology* and the December 4, 2007, issue of *Circulation* as an update to the full-text guideline and is also posted on the ACC (www.acc.org) and AHA (my.americanheart.org) World Wide Web sites. Copies of the focused update are available from both organizations.

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1. Introduction

1.1. Evidence Review

Late-breaking clinical trials presented at the 2005 and 2006 annual scientific meetings of the ACC, AHA, and European Society of Cardiology, as well as selected other data published during the same time period, were reviewed by the standing guideline writing committee along with the parent Task Force and other experts to identify those trials and other key data that might impact guideline recommendations. On the basis of the criteria/considerations noted above, recent trial data and other clinical information were considered when deciding whether there was evidence important enough to prompt a focused update of the 2002 ACC/AHA Guidelines for the Management of Patients With Chronic Stable Angina (3–9). After consideration and

evaluation of the criteria, the 2006 AHA Guidelines for Secondary Prevention for Patients With Coronary and Other Atherosclerotic Vascular Disease (8) were considered important enough to prompt this focused update.

This focused update of the ACC/AHA 2002 Guideline Update for the Management of Patients With Chronic Stable Angina spotlights the 2006 AHA/ACC Guidelines for Secondary Prevention for Patients With Coronary and Other Atherosclerotic Vascular Disease. Only recommendations related to secondary prevention in patients with chronic angina have been revised. In September 2007, the ACC/AHA Task Force on Practice Guidelines convened a writing committee to revise the full guideline for the management of patients with stable ischemic heart disease. This writing committee will consider all the recent evidence, including late-breaking clinical trials recently presented.

Consult the full-text version or executive summary of the ACC/AHA 2002 Guideline Update for the Management of Patients With Chronic Stable Angina for policy on clinical areas not covered by the focused update (10). Individual recommendations updated in this focused update will be incorporated into future revisions and/or updates of the full-text guidelines.

1.2. Organization of Committee and Relationships With Industry

For this focused update, all members of the 2002 Chronic Angina Writing Committee were invited to participate; those who agreed (referred to as the 2007 Focused Update Writing Group) were required to disclose all relationships with industry relevant to the data under consideration (2). Focused Update Writing Group members who had no significant relevant relationships with industry authored the first draft of the focused update; the draft was then reviewed and revised by the full writing group. Each recommendation required a confidential vote by the writing group members prior to external review of the document. Any writing committee member with a significant (greater than $10 000) relationship with industry relevant to the recommendation was recused from voting on that recommendation.

1.3. Review and Approval

This document was reviewed by 2 official reviewers nominated by the ACC and 2 official reviewers nominated by the AHA, as well as 1 reviewer from the ACC Cardiac Catheterization and Intervention Committee and 16 content reviewers. All reviewer relationship with industry information was collected and distributed to the Writing Committee and is published in this document (see Appendix 2 for details).

This document was approved for publication by the governing bodies of the American College of Cardiology Foundation and the AHA.

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Table 2. Cardiovascular Risk Reduction for Patients With Chronic Angina

2002 Chronic Angina Recommendations	2007 Chronic Angina Recommendations	2007 COR and LOE	Comments
	Smoking		
Assess tobacco use. Strongly encourage patient and family to stop smoking and to avoid second-hand smoke. Provide counseling, pharmacological therapy (including nicotine replacement and buproprion), and formal cessation programs as appropriate.	Smoking cessation and avoidance of exposure to environmental tobacco smoke at work and home is recommended. Follow-up, referral to special programs, and/or pharmacotherapy (including nicotine replacement) is recommended, as is a stepwise strategy for smoking cessation (Ask, Advise, Assess, Assist, Arrange).	*I (B)*	Modified recommendation (changed text and COR LOE added)
	Blood Pressure Control		
Initiate lifestyle modification (weight control, physical activity, alcohol moderation, moderate sodium restriction, and emphasis on fruits, vegetables, and low-fat dairy products) in all patients with blood pressure greater than or equal to 130 mm Hg systolic or 80 mm Hg diastolic. Add blood pressure medication, individualized to other patient requirements and characteristics (i.e., age, race, need for drugs with specific benefits) if blood pressure is not less than 140 mm Hg systolic or 90 mm Hg diastolic, or if blood pressure is not less than 130 mm Hg systolic or 85 mm Hg diastolic for individuals with heart failure or renal insufficiency (less than 80 mm Hg diastolic for individuals with diabetes).	Patients should initiate and/or maintain lifestyle modifications—weight control; increased physical activity; moderation of alcohol consumption; limited sodium intake; and maintenance of a diet high in fresh fruits, vegetables, and low-fat dairy products.	*I (B)*	Modified recommendation (changed text and COR LOE added)
	Blood pressure control according to Joint National Conference VII guidelines is recommended (i.e., blood pressure less than 140/90 mm Hg or less than 130/80 mm Hg for patients with diabetes or chronic kidney disease) (11).	*I (A)*	New recommendation
	For hypertensive patients with well established coronary artery disease, it is useful to add blood pressure medication as tolerated, treating initially with beta blockers and/or ACE inhibitors, with addition of other drugs as needed to achieve target blood pressure.	*I (C)*	New recommendation
	Lipid Management		
Start dietary therapy in all patients (less than 7% saturated fat and less than 200 mg per dL cholesterol) and promote physical activity and weight management. Encourage increased consumption of omega-3 fatty acids.	Dietary therapy for all patients should include reduced intake of saturated fats (to less than 7% of total calories), trans-fatty acids, and cholesterol (to less than 200 mg per day).	*I (B)*	Modified recommendation (changed text and COR LOE added)
	Adding plant stanol/sterols (2 g per day) and/or viscous fiber (greater than 10 g per day) is reasonable to further lower LDL-C.	*IIa (A)*	New recommendation
	Daily physical activity and weight management are recommended for all patients.	*I (B)*	New recommendation
Consider omega-3 fatty acids as adjunct for high TG.	For all patients, encouraging consumption of omega-3 fatty acids in the form of fish* or in capsule form (1 g per day) for risk reduction may be reasonable. For treatment of elevated TG, higher doses are usually necessary for risk reduction.	*IIb (B)*	Modified recommendation (changed text and COR LOE added)
Assess fasting lipid profile in all patients, and within 24 hours of hospitalization for those with an acute event. If patients are hospitalized, consider adding drug therapy on discharge. Add drug therapy according to the following guide:	Recommended lipid management includes assessment of a fasting lipid profile.	*I (A)*	Modified recommendation (changed text and COR LOE added)
LDL less than 100 mg per dL (baseline or on-treatment). Further LDL-lowering therapy not required. Consider fibrate or niacin (if low HDL or high TG).	a. LDL-C should be less than 100 mg per dL and	*I (A)*	Modified recommendation (changed text and COR LOE added)
	b. Reduction of LDL-C to less than 70 mg per dL or high-dose statin therapy is reasonable.	*IIa (A)*	New recommendation
LDL 100 to 129 mg per dL (baseline or on-treatment) Therapeutic options: Intensify LDL-lowering therapy (statin or resin†). Fibrate or niacin (if low HDL or high TG). Consider combined drug therapy (statin + fibrate or niacin) (if low HDL or high TG).	c. If baseline LDL-C is greater than or equal to 100 mg per dL, LDL-lowering drug therapy should be initiated in addition to therapeutic lifestyle changes. When LDL-lowering medications are used in high-risk or moderately high-risk persons, it is recommended that intensity of therapy be sufficient to achieve a 30% to 40% reduction in LDL-C levels.	*I (A)*	Modified recommendation (changed text and COR LOE added)
LDL greater than or equal to 130 mg per dL (baseline or on-treatment). Intensify LDL-lowering therapy (statin or resin†). Add or increase drug therapy with lifestyle therapies.	d. If on-treatment LDL-C is greater than or equal to 100 mg per dL, LDL-lowering drug therapy should be intensified.	*I (A)*	Modified recommendation (changed text and COR LOE added)
	e. If baseline LDL-C is 70 to 100 mg per dL, it is reasonable to treat LDL-C to less than 70 mg per dL.	*IIa (B)*	New recommendation

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Table 2. Continued

2002 Chronic Angina Recommendations	2007 Chronic Angina Recommendations	2007 COR and LOE	Comments
If TG 200 to 499 mg per dL: Consider fibrate or niacin *after* LDL-lowering therapy.†	f. If TG are 200 to 499 mg per dL, non–HDL-C‡ should be less than 130 mg per dL and	*I (B)*	Modified recommendation (changed text and COR LOE added)
	g. Further reduction of non–HDL-C‡ to less than 100 mg per dL is reasonable, if TG are greater than or equal to 200 to 499 mg per dL.	*IIa (B)*	New recommendation
	h. Therapeutic options to reduce non–HDL-C are: • Niacin can be useful as a therapeutic option to reduce non–HDL-C (after LDL-C–lowering therapy)§ or • Fibrate therapy as a therapeutic option can be useful to reduce non–HDL-C‡ (after LDL-C–lowering therapy).	 *IIa (B)*	New recommendation
If TG greater than or equal to 500 mg per dL: Consider fibrate or niacin *before* LDL-lowering therapy.*	i. If TG are greater than or equal to 500 mg per dL, therapeutic options to lower the TG to reduce the risk of pancreatitis are fibrate or niacin; these should be initiated before LDL-C lowering therapy. The goal is to achieve non–HDL-C‡ less than 130 mg per dL if possible.	*I (C)*	Modified recommendation (changed text and COR LOE added)
	The following lipid management strategies can be beneficial: a. If LDL-C less than 70 mg per dL is the chosen target, consider drug titration to achieve this level to minimize side effects and cost. When LDL-C less than 70 mg per dL is not achievable because of high baseline LDL-C levels, it generally is possible to achieve reductions of greater than 50% in LDL-C levels by either statins or LDL-C–lowering drug combinations. (12)	*IIa (C)*	
If TG greater than or equal to 150 mg per dL or HDL less than 40 mg per dL: Emphasize weight management and physical activity. Advise smoking cessation.			Deleted recommendation
	Drug combinations are beneficial for patients on lipid lowering therapy who are unable to achieve LDL-C less than 100 mg per dL.	*I (C)*	New recommendation
	Physical Activity		
Assess risk, preferably with exercise test, to guide prescription. Encourage minimum of 30 to 60 minutes of activity, preferably daily, or at least 3 or 4 times weekly (walking, jogging, cycling, or other aerobic activity) supplemented by an increase in daily lifestyle activities (e.g., walking breaks at work, gardening, household work).	Physical activity of 30 to 60 minutes, 7 days per week (minimum 5 days per week) is recommended. All patients should be encouraged to obtain 30 to 60 minutes of moderate-intensity aerobic activity, such as brisk walking, on most, preferably all, days of the week, supplemented by an increase in daily activities (such as walking breaks at work, gardening, or household work).	*I (B)*	Modified recommendation (changed text and COR LOE added)
	The patient's risk should be assessed with a physical activity history. Where appropriate, an exercise test is useful to guide the exercise prescription (see Exercise Testing Guideline) (10).	*I (B)*	New recommendation
Advise medically supervised programs for moderate- to high-risk patients.	Medically supervised programs (cardiac rehabilitation) are recommended for at-risk patients (e.g., recent acute coronary syndrome or revascularization, heart failure).	*I (B)*	Modified recommendation (changed text and COR LOE added)
	Expanding physical activity to include resistance training on 2 days per week may be reasonable.	*IIb (C)*	New recommendation

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Table 2. Continued

2002 Chronic Angina Recommendations	2007 Chronic Angina Recommendations	2007 COR and LOE	Comments
	Weight Management		
Calculate BMI and measure waist circumferences as part of evaluation. Monitor response of BMI and waist circumference to therapy. Start weight management and physical activity as appropriate. Desirable BMI range is 18.5 to 24.9 kg/m^2.	BMI and waist circumference should be assessed regularly. On each patient visit, it is useful to consistently encourage weight maintenance/reduction through an appropriate balance of physical activity, caloric intake, and formal behavioral programs when indicated to achieve and maintain a BMI between 18.5 and 24.9 kg/m^2.	*I (B)*	Modified recommendation (changed text and COR LOE added)
When BMI greater than or equal to 25 kg/m2, goal for waist circumference is less than or equal to 40 inches (102 cm) in men and less than or equal to 35 inches (89 cm) in women.	If waist circumference is greater than or equal to 35 inches (89 cm) in women or greater than or equal to 40 inches (102 cm) in men, it is beneficial to initiate lifestyle changes and consider treatment strategies for metabolic syndrome as indicated. Some male patients can develop multiple metabolic risk factors when the waist circumference is only marginally increased (e.g., 37 to 40 inches [94 to 102 cm]). Such persons may have a strong genetic contribution to insulin resistance. They should benefit from changes in life habits, similarly to men with categorical increases in waist circumference.	*I (B)*	Modified recommendation (changed text and COR LOE added)
Start weight management and physical activity as appropriate. Desirable BMI range is 18.5 to 24.9 kg/m^2.	The initial goal of weight loss therapy should be to gradually reduce body weight by approximately 10% from baseline. With success, further weight loss can be attempted if indicated through further assessment.	*I (B)*	Modified recommendation (changed text and COR LOE added)
	Diabetes Management		
Appropriate hypoglycemic therapy to achieve near-normal fasting plasma glucose, as indicated by HbA_{1c}.	Diabetes management should include lifestyle and pharmacotherapy measures to achieve a near-normal HbA_{1c}.	*I (B)*	Modified recommendation (changed text and COR LOE added)
Treatment of other risks (e.g., physical activity, weight management, blood pressure, and cholesterol management).	Vigorous modification of other risk factors (e.g., physical activity, weight management, blood pressure control, and cholesterol management) as recommended should be initiated and maintained.	*I (B)*	Modified recommendation (changed text and COR LOE added)
	Antiplatelet Agents/Anticoagulants		
Start and continue indefinitely aspirin 75 to 325 mg per day if not contraindicated. Consider clopidogrel as an alternative if aspirin contraindicated.	Aspirin should be started at 75 to 162 mg per day and continued indefinitely in all patients unless contraindicated.	*I (A)*	Modified recommendation (changed text and COR LOE added)
Manage warfarin to international normalized ratio = 2.0 to 3.0 in post-MI patients when clinically indicated or for those not able to take aspirin or clopidogrel.	Use of warfarin in conjunction with aspirin and/or clopidogrel is associated with an increased risk of bleeding and should be monitored closely.	*I (B)*	Modified recommendation (changed text and COR LOE added)
	Renin-Angiotensin-Aldosterone System Blockers		
ACE Inhibitors Treat all patients indefinitely post-MI; start early in stable high-risk patients (anterior MI, previous MI, Killip class II [S3, gallop, rales, radiographic CHF]). Consider chronic therapy for all other patients with coronary or other vascular disease unless contraindicated.	ACE inhibitors should be started and continued indefinitely in all patients with left ventricular ejection fraction less than or equal to 40% and in those with hypertension, diabetes, or chronic kidney disease unless contraindicated.	*I (A)*	Modified recommendation (changed text and COR LOE added)
Use as needed to manage blood pressure or symptoms in all other patients.	ACE inhibitors should be started and continued indefinitely in patients who are not lower risk (lower risk defined as those with normal left ventricular ejection fraction in whom cardiovascular risk factors are well controlled and revascularization has been performed), unless contraindicated.	*I (B)*	Modified recommendation (changed text and COR LOE added)
	It is reasonable to use ACE inhibitors among lower-risk patients with mildly reduced or normal left ventricular ejection fraction in whom cardiovascular risk factors are well controlled and revascularization has been performed.	*IIa (B)*	New recommendation

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Table 2. Continued

2002 Chronic Angina Recommendations	2007 Chronic Angina Recommendations	2007 COR and LOE	Comments
	Renin-Angiotensin-Aldosterone System Blockers (Continued)		
	Angiotensin receptor blockers are recommended for patients who have hypertension, have indications for but are intolerant of ACE inhibitors, have heart failure, or have had a myocardial infarction with left ventricular ejection fraction less than or equal to 40%.	*I (A)*	New recommendation
	Angiotensin receptor blockers may be considered in combination with ACE inhibitors for heart failure due to left ventricular systolic dysfunction.	*IIb (B)*	New recommendation
	Aldosterone blockade is recommended for use in post-MI patients without significant renal dysfunction¶ or hyperkalemia‖ who are already receiving therapeutic doses of an ACE inhibitor and a beta blocker, have a left ventricular ejection fraction less than or equal to 40%, and have either diabetes or heart failure.	*I (A)*	New recommendation
	Beta Blockers		
Start in all post-MI and acute patients (arrhythmia, LV dysfunction, inducible ischemia) at 5 to 28 days. Continue 6 months minimum. Observe usual contraindications. Use as needed to manage angina, rhythm, or blood pressure in all other patients.	It is beneficial to start and continue beta-blocker therapy indefinitely in all patients who have had MI, acute coronary syndrome, or left ventricular dysfunction with or without heart failure symptoms, unless contraindicated.	*I (A)*	Modified recommendation (changed text and COR LOE added)
	Influenza Vaccination		
	An annual influenza vaccination is recommended for patients with cardiovascular disease.	*I (B)*	New recommendation
	Chelation Therapy		
	Chelation therapy (intravenous infusions of ethylenediamine tetraacetic acid or EDTA) is not recommended for the treatment of chronic angina or arteriosclerotic cardiovascular disease and may be harmful because of its potential to cause hypocalcemia.	*III (C)*	New recommendation

*Pregnant and lactating women should limit their intake of fish to minimize exposure to methylmercury.

†The use of resin is relatively contraindicated when TG are lower than 200 mg per dL.

‡Non-HDL cholesterol = total cholesterol minus HDL cholesterol.

§The combination of high-dose statin and fibrate can increase risk for severe myopathy. Statin doses should be kept relatively low with this combination. Dietary supplement niacin must not be used as a substitute for prescription niacin.

¶Creatinine should be less than 2.5 mg per dL in men and less than 2.0 mg per dL in women.

‖Potassium should be less than 5.0 mEq per L.

ACE indicates angiotensin-converting enzyme; BMI, body mass index; CHF, congestive heart failure; COR, classification of recommendation; HbA_{1c}, hemoglobin A_{1c}; HDL, high-density lipoprotein; HDL-C, high-density lipoprotein cholesterol; LDL, low-density lipoprotein; LDL-C, low-density lipoprotein cholesterol; LOE, level of evidence; MI, myocardial infarction; and TG, triglycerides.

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APPENDIX 1. AUTHOR RELATIONSHIPS WITH INDUSTRY—WRITING GROUP TO DEVELOP THE 2007 FOCUSED UPDATE OF THE ACC/AHA 2002 GUIDELINES FOR THE MANAGEMENT OF PATIENTS WITH CHRONIC STABLE ANGINA

Committee Member	Research Grant	Speakers' Bureau	Stock Ownership	Board of Directors	Consultant/ Advisory Member
Dr. Theodore D. Fraker, Jr.	None	None	None	None	None
Dr. Stephan Fihn	None	None	None	None	None

This table represents the actual or potential relationships with industry that were reported at the initial writing committee meeting on August 27, 2004. This table has been updated in conjunction with all meetings and conference calls of the writing committee.

APPENDIX 2. PEER REVIEWER RELATIONSHIPS WITH INDUSTRY—2007 FOCUSED UPDATE OF THE ACC/AHA 2002 GUIDELINES FOR THE MANAGEMENT OF PATIENTS WITH CHRONIC STABLE ANGINA

Committee Member	Representation	Research Grant	Speakers' Bureau	Stock Ownership	Board of Directors	Consultant/ Advisory Member
Dr. Jonathan Abrams	• Official Reviewer—AHA	None	None	None	None	None
Dr. Michael Crawford	• Official Reviewer—AHA	None	None	None	None	Pfizer
Dr. Chittur A. Sivaram	• Official Reviewer—ACCF Board of Governors	None	None	None	None	None
Dr. Mazen Abu-Fadel	• Content Reviewer—ACCF Cardiac Catheterization and Intervention Committee	None	None	None	None	None
Dr. Christopher Cannon	• Content Reviewer—ACC/AHA Acute Coronary Syndromes Data Standards Committee	• Accumetrics • Amgen • AstraZeneca • Bayer Healthcare LLC • Beckman Coulter Inc. • Biosite Inc. • Bristol-Myers Squibb • CV Therapeutics • Diagnostics Inc. • Eli Lilly Co • GlaxoSmithKline • Inotek Pharmaceuticals Co • Integrated Therapeutics Co • Merck • Millennium • NIH • Novartis Pharmaceuticals • Nuvelo, Inc. • Ortho-Clinical • Pfizer • Pharmaceuticals, Inc. • Recherche • Roche Diagnostics Co • Roche Diagnostics GmbH • Sanofi-Aventis • Sanofi-Synthelabo • Schering-Plough	• Accumetrics • AstraZeneca • Bristol-Myers Squibb • Merck • Pfizer • Sanofi-Aventis • Schering-Plough	None	None	• AstraZeneca • Bristol-Myers Squibb • BGB New York • DIME • GSK • Merck • NCME • Pfizer • Sanofi-Aventis • Schering-Plough
Dr. John G. Canto	• Content Reviewer—Individual Review	• Pfizer • Schering-Plough*	• Bristol-Myers Squibb* • CV Therapeutics • GlaxoSmithKline* • Pfizer* • Sanofi-Aventis*	None	None	• NRMI/Genentech • Pfizer • Sanofi-Aventis
Dr. Bernard Chaitman	• Content Reviewer—ACC/AHA Acute Coronary Syndromes Data Standards Committee	• CV Therapeutics • Pfizer	• AstraZeneca • Pfizer	None	None	• CV Therapeutics • Eli Lilly • Genentech • Merck

APPENDIX 2. Continued.

Committee Member	Representation	Research Grant	Speakers' Bureau	Stock Ownership	Board of Directors	Consultant/ Advisory Member
Dr. Julius M. Gardin	• Content Reviewer—ACC/AHA Chronic Stable Angina Guideline Committee	None	• AstraZeneca • Bristol-Myers Squibb • Pfizer • Takeda	None	None	• AstraZeneca • Bristol-Myers Squibb • Pfizer • Takeda
Dr. Robert Guyton	• Content Reviewer—ACC/AHA Coronary Artery Bypass Graft Surgery Guideline Committee	None	None	None	None	None
Dr. Robert Harrington	• Content Reviewer—American Heart Association	• AstraZeneca • Bristol-Myers Squibb • Cordis • Conor Med System • Eli Lilly • GlaxoSmithKline • Merck • Sanofi-Aventis • Schering-Plough • The Medicines Company	None	None	None	None
Dr. Judith Hochman	• Content Reviewer—STEMI Guideline Committee	• Arginox Pharmaceutical • Eli Lilly	None	None	None	• CV Therapeutics • Datascope • Eli Lilly • GlaxoSmithKline • Merck • Procter & Gamble • Sanofi-Aventis
Dr. Hani Jneid	• Content Reviewer—AHA Diagnostic and Interventional Cardiac Catheterization Committee	None	None	None	None	None
Dr. Thomas F. Koinis	• Content Reviewer—American Association of Family Practice	None	None	None	None	• Merck
Dr. Frederick Kushner	• Content Reviewer—ACC/AHA STEMI Guideline Committee and ACC/AHA Task Force on Practice Guidelines	None	None	• Johnson & Johnson • Pfizer • Sanofi	None	• AstraZeneca • Bristol-Myers Squibb • Merck • Novartis • Pfizer
Dr. Glenn N. Levine	• Content Reviewer—AHA Acute Cardiac Care Committee	• AstraZeneca • Bristol-Myers Squibb • Guidant • Medtronic • Pfizer	• Bristol-Myers Squibb • Sanofi-Aventis • The Medicines Company	None	None	• Bristol-Myers Squibb • Sanofi-Aventis • The Medicines Company
Dr. Robert C. Marshall	• Content Reviewer—American Association of Family Practice	None	None	None	None	None
Dr. Robert O'Rourke	• Content Reviewer—ACC/AHA Chronic Stable Angina Guideline Committee	Multiple drug companies funding BARI 2D and COURAGE trials	Pfizer	None	None	• Aventis • Merck • Pfizer
Dr. Martha Radford	• Content Reviewer—ACS Data Standards	None	None	None	None	None
Dr. Rita Redberg	• Content Reviewer—ACC Prevention Committee	None	None	None	None	None
Dr. Charanjit Rihal	• Content Reviewer—AHA Diagnostic and Interventional Cardiac Catheterization Committee	None	None	None	None	None
Dr. Allan M. Ross	• Content Reviewer—Individual Review	• Boehringer Ingelheim • Genentech • Roche	None	None	None	• Boehringer Ingelheim • Roche

APPENDIX 2. Continued.

Committee Member	Representation	Research Grant	Speakers' Bureau	Stock Ownership	Board of Directors	Consultant/ Advisory Member
Dr. Katherine Sherif	• Content Reviewer—American College of Physicians	• Novartis	None	None	None	• Novartis • Reliant
Dr. Janet Wyman	• Content Reviewer—ACCF Cardiac Catheterization and Intervention Committee	None	None	None	None	None
Dr. Yerem Yeghiazarians	• Content Reviewer—AHA Diagnostic and Interventional Cardiac Catheterization Committee	None	• Pfizer • Sanofi-Aventis	None	None	None
Dr. Michael A. Fifer	• Content Reviewer—AHA Acute Cardiac Care Committee	• Merck*	None	None	None	None
Dr. Eric Bates	• Content Reviewer	None	• Eli Lilly • Hoffman-LaRoche • PDL BioPharma • Sanofi-Aventis • Schering-Plough	None	None	• AstraZeneca • Datascope • Eli Lilly • GlaxoSmithKline • Sanofi-Aventi • The Medicines Company

This table represents the relationships of peer reviewers with industry that were disclosed at the time of peer review of this guideline. It does not necessarily reflect relationships with industry at the time of publication. Names are listed in alphabetical order with each category of review. Participation in the peer review process does not imply endorsement of this document.

ACCF indicates American College of Cardiology Foundation; AHA, American Heart Association.

*Indicates a significant relationship (valued at $10,000 or more).

2007 Chronic Angina Focused Update of the ACC/AHA 2002 Guidelines for the Management of Patients With Chronic Stable Angina: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients With Chronic Stable Angina

Theodore D. Fraker, Jr, Stephan D. Fihn, Writing on behalf of the 2002 Chronic Stable Angina Writing Committee, 2002 WRITING COMMITTEE MEMBERS, Raymond J. Gibbons, Jonathan Abrams, Kanu Chatterjee, Jennifer Daley, Prakash C. Deedwania, John S. Douglas, T. Bruce Ferguson, Jr, Stephan D. Fihn, Theodore D. Fraker, Jr, Julius M. Gardin, Robert A. O'Rourke, Richard C. Pasternak, Sankey V. Williams, Sidney C. Smith, Jr, Alice K. Jacobs, Cynthia D. Adams, Jeffrey L. Anderson, Christopher E. Buller, Mark A. Creager, Steven M. Ettinger, Jonathan L. Halperin, Sharon A. Hunt, Harlan M. Krumholz, Frederick G. Kushner, Bruce W. Lytle, Rick Nishimura, Richard L. Page, Barbara Riegel, Lynn G. Tarkington and Clyde W. Yancy

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Correction

In the ACC/AHA Focused Update by Fraker and Fihn, who were writing on behalf of the 2002 Chronic Stable Angina Writing Committee, "2007 Chronic Angina Focused Update of the ACC/AHA 2002 Guidelines for the Management of Patients With Chronic Stable Angina: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines Writing Group to Develop the Focused Update of the 2002 Guidelines for the Management of Patients With Chronic Stable Angina," the following footnote was omitted from the version that published ahead of print on November 12, 2007 (DOI: 10.1161/CIRCULATIONAHA.107.187930).

†Dr Pasternak is no longer a member of the writing group. In June 2004, he accepted an offer of employment as Vice President, Clinical Research, Cardiovascular and Atherosclerosis, at Merck Research Laboratories, and such employment precludes writing group membership. He was not involved in the 2007 Focused Update.

This change has been made in the current print (*Circulation*. 2007;116:2762–2772) and online (http://circ.ahajournals.org/cgi/content/full/116/23/2762) versions of the article.

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