

## 2010 Bravo Health Coronary and Other Vascular Disease Secondary Prevention Guidelines

Bravo Health supports the American Heart Association/American College of Cardiology (AHA/ACC) Secondary Prevention for Patients with Coronary and Other Vascular Disease Guidelines 2006 Update. Guidelines should never supersede clinical judgment. The practitioner, in conjunction with the patient or responsible party, should decide whether these or other recommended services should be performed more frequently, less frequently, or not at all.

### MAJOR RECOMMENDATIONS

Definitions for the weight of the evidence (A-C) and classes of recommendations (I-III) are provided at the end of the "Major Recommendations" field.

### American Heart Association/American College of Cardiology (AHA/ACC) Secondary Prevention for Patients with Coronary and Other Vascular Disease\*: 2006 Update

|   | Intervention Recommendations With Class of Recommendation and Level of Evidence   |
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| <p><b>Smoking</b><br/> <u>Goal</u><br/>                     Complete cessation. No exposure to environmental tobacco smoke.</p>   | <ul style="list-style-type: none"> <li>• Ask about tobacco use status at every visit. <b>I (B)</b></li> <li>• Advise every tobacco user to quit. <b>I (B)</b></li> <li>• Assess the tobacco user's willingness to quit. <b>I (B)</b></li> <li>• Assist by counseling and developing a plan for quitting. <b>I (B)</b></li> <li>• Arrange follow-up, referral to special programs, or pharmacotherapy (including nicotine replacement and bupropion). <b>I (B)</b></li> <li>• Urge avoidance of exposure to environmental tobacco smoke at work and home. <b>I (B)</b></li> </ul>  |
| <p><b>Blood Pressure Control</b><br/> <u>Goal</u><br/>                     &lt;140/90 mm Hg<br/>                     or<br/>                     &lt;130/80 mm Hg if patient has diabetes or chronic kidney disease</p> | <p><b>For all patients:</b></p> <ul style="list-style-type: none"> <li>• Initiate or maintain lifestyle modification—weight control; increased physical activity; alcohol moderation; sodium reduction; and emphasis on increased consumption of fresh fruits, vegetables, and low-fat dairy products. <b>I (B)</b></li> <li>• <b>For patients with blood pressure <math>\geq 140/90</math> mm Hg (or <math>\geq 130/80</math> mm Hg for individuals with chronic kidney disease or diabetes):</b></li> <li>• As tolerated, add blood pressure medication, treating initially with beta-blockers and/or angiotensin-converting enzyme (ACE) inhibitors, with addition of other drugs such as thiazides as needed to achieve goal blood pressure. <b>I (A)</b></li> <li>• [For compelling indications for individual drug classes in specific vascular diseases, see Seventh Report of the Joint National Committee on <b>Prevention</b>, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7).]</li> </ul> |
| <p><b>Lipid Management</b><br/> <u>Goal</u><br/>                     Low-density lipoprotein cholesterol (LDL-C) &lt; 100 mg/dL<br/>                     If triglycerides are <math>\geq 200</math> mg/dL non-high-</p> | <p><b>For all patients:</b></p> <ul style="list-style-type: none"> <li>• Start dietary therapy. Reduce intake of saturated fats (to &lt;7% of total calories), <i>trans</i>-fatty acids, and cholesterol (to &lt;200 mg/dL). <b>I (B)</b></li> <li>• Adding plant stanol/sterols (2 g/day) and viscous fiber (&gt;10 g/day) will further lower LDL-C</li> </ul>   |

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| <p>density lipoprotein cholesterol (HDL-C) should be &lt;130 mg/dL<sup>a</sup></p>                          | <ul style="list-style-type: none"> <li>• Promote daily physical activity and weight management. <b>I (B)</b></li> <li>• Encourage increased consumption of omega-3 fatty acids in the form of fish<sup>b</sup> or in capsule form (1 g/day) for risk reduction. For treatment of elevated triglycerides, higher doses are usually necessary for risk reduction. <b>IIb (B)</b></li> </ul> <p><b>For lipid management:</b><br/> Assess fasting lipid profile in all patients, and within 24 hours of hospitalization for those with an acute cardiovascular or coronary event. For hospitalized patients, initiate lipid-lowering medication as recommended below before discharge according to the following schedule:</p> <ul style="list-style-type: none"> <li>• LDL-C should be &lt;100 mg/dL <b>I (A), and</b></li> <li>• Further reduction of LDL-C to &lt;70 mg/dL is reasonable. <b>IIa (A)</b></li> <li>• If baseline LDL-C is <math>\geq 100</math> mg/dL, initiate LDL-lowering drug therapy.<sup>c</sup> <b>I (A)</b></li> <li>• If on-treatment LDL-C <math>\geq 100</math> mg/dL, intensify low-density lipoprotein (LDL)-lowering therapy (may require LDL-lowering drug combination<sup>d</sup>). <b>I (A)</b></li> <li>• If baseline LDL-C is 70 to 100 mg/dL, it is reasonable to treat to LDL-C &lt;70 mg/dL. <b>IIa (B)</b></li> <li>• If triglycerides are 200 to 499 mg/dL, non-HDL-C should be &lt;130 mg/dL. <b>I (B), and</b></li> <li>• Further reduction of non-HDL-C to &lt;100 mg/dL is reasonable. <b>IIa (B)</b></li> <li>• Therapeutic options to reduce non-HDL-C are: <ul style="list-style-type: none"> <li>• More intense LDL-C-lowering therapy <b>I (B), or</b></li> <li>• Niacin<sup>e</sup> (after LDL-C-lowering therapy) <b>IIa (B), or</b></li> <li>• Fibrate therapy<sup>f</sup> (after LDL-C-lowering therapy) <b>IIa (B)</b></li> </ul> </li> <li>• If triglycerides are <math>\geq 500</math> mg/dL, therapeutic options to prevent pancreatitis are fibrate<sup>f</sup> or niacin<sup>f</sup> before LDL-lowering therapy; and treat LDL-C to goal after triglyceride-lowering therapy. Achieve non-HDL-C &lt;130 mg/dL if possible. <b>I (C)</b></li> </ul> |
| <p><b>Physical Activity</b><br/> <u>Goal</u><br/> 30 minutes, 7 days per week (minimum 5 days per week)</p> | <ul style="list-style-type: none"> <li>• For all patients, assess risk with a physical activity history and/or an exercise test, to guide prescription. <b>I (B)</b></li> <li>• For all patients, encourage 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 lifestyle activities (e.g., walking breaks at work, gardening, household work). <b>I (B)</b></li> <li>• Encourage resistance training 2 days per week. <b>IIb (C)</b></li> <li>• Advise medically supervised programs for high-risk patients (e.g., recent acute coronary syndrome or revascularization, heart failure). <b>I (B)</b></li> </ul>   |
| <p><b>Weight Management</b></p>   | <ul style="list-style-type: none"> <li>• Assess body mass index and/or waist circumference on each visit and</li> </ul>  |

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| <p><u>Goal</u><br/>           Body mass index: 18.5 to 24.9 kg/m<sup>2</sup><br/>           Waist circumference: men &lt;40 inches, women &lt;35 inches</p> | <p>consistently encourage weight maintenance/reduction through an appropriate balance of physical activity, caloric intake, and formal behavioral programs when indicated to maintain/achieve a body mass index between 18.5 and 24.9 kg/m<sup>2</sup>. <b>I (B)</b></p> <ul style="list-style-type: none"> <li>• If waist circumference (measured horizontally at the iliac crest) is ≥35 inches in women and ≥40 inches in men, initiate lifestyle changes and consider treatment strategies for metabolic syndrome as indicated. <b>I (B)</b></li> <li>• The initial goal of weight loss therapy should be to reduce body weight by approximately 10% from baseline. With success, further weight loss can be attempted if indicated through further assessment. <b>I (B)</b></li> </ul>   |
| <p><b>Diabetes Management</b><br/> <u>Goal</u><br/>           Glycosylated hemoglobin (HbA<sub>1c</sub>) &lt;7%</p>   | <ul style="list-style-type: none"> <li>• Initiate lifestyle and pharmacotherapy to achieve near-normal HbA<sub>1c</sub>. <b>I (B)</b></li> <li>• Begin vigorous modification of other risk factors (e.g., physical activity, weight management, blood pressure control, and cholesterol management as recommended above). <b>I (B)</b></li> <li>• Coordinate diabetic care with patient's primary care physician or endocrinologist. <b>I (C)</b></li> </ul>  |
| <p><b>Antiplatelet Agents/Anticoagulants</b></p>  | <ul style="list-style-type: none"> <li>• Start aspirin 75 to 162 mg/day and continue indefinitely in all patients unless contraindicated. <b>I (A)</b></li> <li>• For patients undergoing coronary artery bypass grafting, aspirin should be started within 48 hours after surgery to reduce saphenous vein graft closure. Dosing regimens ranging from 100 to 325 mg/day appear to be efficacious. Doses higher than 162 mg/day can be continued for up to 1 year. <b>I (B)</b></li> <li>• Start and continue clopidogrel 75 mg/day in combination with aspirin for up to 12 months in patients after acute coronary syndrome or percutaneous coronary intervention with stent placement (≥1 month for bare metal stent, ≥3 months for sirolimus-eluting stent, and ≥6 months for paclitaxel-eluting stent). <b>I (B)</b></li> <li>• Patients who have undergone percutaneous coronary intervention with stent placement should initially receive higher-dose aspirin at 325 mg/day for 1 month for bare metal stent, 3 months for sirolimus-eluting stent, and 6 months for paclitaxel-eluting stent. <b>I (B)</b></li> <li>• Manage warfarin to international normalized ratio=2.0 to 3.0 for paroxysmal or chronic atrial fibrillation or flutter, and in post-myocardial infarction patients when clinically indicated (e.g., atrial fibrillation, left ventricular thrombus). <b>I (A)</b></li> <li>• Use of warfarin in conjunction with aspirin and/or clopidogrel is associated with increased risk of bleeding and should be monitored closely. <b>I (B)</b></li> </ul> |

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| <b>Renin-Angiotensin-Aldosterone System Blockers</b> | <p><b>Angiotensin-converting enzyme (ACE) inhibitors:</b></p> <ul style="list-style-type: none"> <li>• Start and continue indefinitely in all patients with left ventricular ejection fraction <math>\leq 40\%</math> and in those with hypertension, diabetes, or chronic kidney disease, unless contraindicated. <b>I (A)</b></li> <li>• Consider for all other patients. <b>I (B)</b></li> <li>• Among lower-risk patients with normal left ventricular ejection fraction in whom cardiovascular risk factors are well controlled and revascularization has been performed, use of ACE inhibitors may be considered optional. <b>IIa (B)</b></li> </ul> <p><b>Angiotensin receptor blockers:</b></p> <ul style="list-style-type: none"> <li>• Use in patients who are intolerant of ACE inhibitors and have heart failure or have had a myocardial infarction with left ventricular ejection fraction <math>\leq 40\%</math>. <b>I (A)</b></li> <li>• Consider in other patients who are ACE inhibitor intolerant. <b>I (B)</b></li> <li>• Consider use in combination with ACE inhibitors in systolic-dysfunction heart failure. <b>IIb (B)</b></li> </ul> <p><b>Aldosterone blockade:</b></p> <ul style="list-style-type: none"> <li>• Use in post-myocardial infarction patients, without significant renal dysfunction<sup>g</sup> or hyperkalemia<sup>h</sup>, who are already receiving therapeutic doses of an ACE inhibitor and beta-blocker, have a left ventricular ejection fraction <math>\leq 40\%</math>, and have either diabetes or heart failure. <b>I (A)</b></li> </ul> |
| <b>Beta-Blockers</b>                                 | <ul style="list-style-type: none"> <li>• Start and continue indefinitely in all patients who have had myocardial infarction, acute coronary syndrome, or left ventricular dysfunction with or without heart failure symptoms, unless contraindicated. <b>I (A)</b></li> <li>• Consider chronic therapy for all other patients with coronary or other vascular disease or diabetes unless contraindicated. <b>IIa (C)</b></li> </ul>   |
| <b>Influenza Vaccination</b>                         | <ul style="list-style-type: none"> <li>• Patients with cardiovascular disease should have an influenza vaccination. <b>I (B)</b></li> </ul>   |

## Notes:

\*Patients covered by these guidelines include those with established coronary and other atherosclerotic vascular disease, including peripheral arterial disease, atherosclerotic aortic disease, and carotid artery disease. Treatment of patients whose only manifestation of cardiovascular risk is diabetes will be the topic of a separate American Heart Association (AHA) scientific statement.

<sup>a</sup> Non-HDL-C =total cholesterol minus HDL-C.

<sup>b</sup> Pregnant and lactating women should limit their intake of fish to minimize exposure to methylmercury.

<sup>c</sup> When LDL-lowering medications are used, obtain at least a 30% to 40% reduction in LDL-C levels. If LDL-C <70 mg/dL is the chosen target, consider drug titration to achieve this level to minimize side effects and cost. When LDL-C <70 mg/dL is not achievable because of high baseline LDL-C levels, it generally is possible to achieve reductions of >50% in LDL-C levels by either statins or LDL-C-lowering drug combinations.

<sup>d</sup> Standard dose of statin with ezetimibe, bile acid sequestrant, or niacin.

<sup>e</sup> The combination of high-dose statin + 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.

<sup>f</sup> Patients with very high triglycerides should not consume alcohol. The use of bile acid sequestrant is relatively contraindicated when triglycerides are >200 mg/dL.

<sup>g</sup> Creatinine should be <2.5 mg/dL in men and <2.0 mg/dL in women.

<sup>h</sup> Potassium should be <5.0 mEq/L.

## **Definitions:**

### **Levels of Evidence**

**Level of Evidence A:** Data derived from multiple randomized clinical trials or meta-analyses.

**Level of Evidence B:** Data derived from a single randomized trial or nonrandomized studies.

**Level of Evidence C:** Only consensus opinion of experts, case studies, or standard-of-care.

### **Strength of Recommendations**

**Class I:** Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

**Class II:** Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.

**Class IIa:** Weight of evidence/opinion is in favor of usefulness/efficacy.

**Class IIb:** Usefulness/efficacy is less well established by evidence/opinion.

**Class III:** Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.