Guidelines for the Management of Coronary Artery Disease (CAD): Secondary Prevention
Preventing Cardiovascular Morbidity and Mortality in Patients with CAD or Other Vascular Disease

Adapted from the American Heart Association 1995, 1997, 2002 Consensus panel statements (see “References”). For further information about this guideline, please contact Cheryl Warner, MD, at (781) 306-5171. For additional copies of this guideline, please call (617) 509-5739, or visit HPHC's Provider Web site at: www.harvardpilgrim.org, click on “For Providers” and log in. Click on the Medical Management tab.

Tobacco Exposure
Ask, Advise, Assess, Assist
Goals: Complete cessation if currently smoking; avoidance of secondhand smoke.
- Ask all patients about smoking status at every visit; counsel to avoid secondhand smoke.
- Advise about quitting clearly and strongly at each encounter; personalize by tying tobacco use to current health status/illness as appropriate.
- Assess stage of change for smokers and recommend appropriate interventions (stage-based counseling; nicotine replacement therapy [NRT] or bupropion for patients prepared to quit).
- Assist to prevent relapse; reinforce benefits of non-smoking status; reassess stage of change for relapers and offer appropriate interventions.

Lipid Management†
When and How to Treat
- The goal of drug therapy is to achieve target LDL serum cholesterol (<100 mg/dL).
- Statins are the preferred initial therapy in secondary prevention as they are the most effective agents for lowering LDL.
- Patients with the following conditions, now considered CAD risk equivalents, are placed in the highest risk category along with known CAD: diabetes, atherosclerotic disease (e.g. peripheral arterial disease, abdominal aortic aneurysm) and multiple risk factors conferring a 10-year risk of CAD of > 20%† CAD risk equivalents. These patients have a target LDL of <100 mg/dL.
- A lower LDL goal of <70 mg/dL is optional if the patient is categorized as very high risk§, having established CVD plus:
  - Multiple major risk factors (especially diabetes)
  - Severe and poorly controlled risk factors (especially continued cigarette smoking)
  - Multiple risk factors of the metabolic syndrome (especially high triglycerides ≥ 200 mg/dL plus non-HDL ≥ 130 mg/dL with low HDL [<40 mg/dL]), and
  - Acute coronary syndromes
- Perform lipoprotein analysis after fasting 9-12 hours; use average of two measurements, 1-4 weeks apart.↑

Risk-Based Treatment Strategy
Patients with LDL = 100-129 mg/dL and Patients with LDL ≥ 130 mg/dL
Goal: LDL < 100 mg/dL (optional goal of < 70 mg/dL for very high risk patients)
- Perform clinical evaluation (history, exam, laboratory tests).
- Evaluate for secondary causes and familial disorders.
- Initiate diet and drug therapies; initiate or intensify lifestyle counseling; evaluate every 6 weeks.
- If target is not achieved within 12 weeks, adjust dose and/or begin combination therapy; evaluate every 6 weeks. If target is achieved, monitor every 3-4 months.

Blood Pressure3
Goal: <140/90 mmHg, regardless of age. Goal may be lower with some comorbidities, e.g. for patients with diabetes, goal is <130/80, with heart failure or renal insufficiency goal is <130/85.
- Lifestyle modification should be strongly recommended to all patients with elevated BP (exercise, weight management, restricted sodium intake, moderate alcohol intake, fruits and vegetables, low-fat dairy).
- Thiazide type diuretics are first-line therapy unless contraindicated (Should be included in all multi-drug regimens)
- For high-normal (130-139/85-89), Stage 1 (140-159/90-99), and Stages 2 & 3 (≥160/≥100) initiate drug treatment immediately.

Lifestyle Modification for Blood Pressure Management
Proven Efficacy†‡ Possible Efficacy‡ Adjunct Interventions §
Regular aerobic exercise (>30 min., 7x/wk) Adequate dietary potassium Proper lipid management
Weight loss (if >10% above ideal weight) Adequate dietary calcium & magnesium Elimination of tobacco
Na+ restriction (<2.4g/day, not: no added Na+) Dietary omega 3 fatty acids
Moderate alcohol intake (<1-2 oz. ethanol/day) Stress management and relaxation therapies

* Discontinue oral contraceptives or relevant over-the-counter medications if confirmed elevated blood pressure (as appropriate).
† Interventions in this category are consistently supported by literature.
‡ Interventions in this category may be useful but lack consistent support from the literature.
§ Interventions in this category have definite usefulness in decreasing cardiovascular risk, but no direct effect on blood pressure.

HPHC clinical guidelines are designed to assist practitioners by providing an analytical framework for the evaluation and treatment of the more common problems of HPHC patients. They are not intended either to replace a practitioner's judgment or establish a protocol for all patients with a particular condition. It is understood that some patients will not fit the clinical conditions contemplated by a guideline, and that a guideline will rarely establish the only appropriate approach to a problem. © October, 2004; Harvard Pilgrim Health Care.
**Physical Activity**
- Perform ETT to determine exercise tolerance if there is no record of a recent test.
- Inquire about physical activity status at each opportunity.
- Recommendations**:
  - Sixty minutes of moderate-level physical activity, ideally daily, or as appropriate for individual risk.
  - This can be completed in a single session or accumulated over several shorter sessions.
  - Emphasize making physical activity part of a patient's daily routine to achieve consistency.

**Weight Assessment and Management**
- Body Mass Index (BMI) correlates positively with BP and TC values, and negatively with HDL.
- Abdominal obesity underlies the metabolic syndrome, which significantly increases the risk of CAD.

**Weight assessment**
- BMI should be determined in all adult patients; patients of normal weight should have BMI reassessed in 2 years.
  - BMI describes body weight relative to height and is strongly correlated with total body fat content in adults.
  - See "Body Mass Index", right, for interpretations.
- Measure waist circumference during routine examinations; desirable waist circumferences:
  - Men: ≤ 40 inches
  - Women: ≤ 35 inches
- Strongly emphasize importance of physical activity and weight management in patients with additional comorbidities, including diabetes mellitus, hypertension and hypercholesterolemia.
  - Initiate diet, behavioral therapy, and physical activity routine. Monitor response.

**BMI**
\[ \text{BMI} = \frac{\text{(weight in pounds)}}{\left(\text{height in inches}\right)^2} \times 703 \]

**Diabetes**
**Goal:** HbA1c < 7%
- Initiate appropriate hypoglycemic therapy to achieve near-normal fasting plasma glucose, as indicated by HbA1c.

**Aspirin**
- Initiate aspirin, 75 to 325 mg/d, if not contraindicated (see right).
  - Though not considered routine therapy, results of ASPECT-2 Study indicate warfarin superior to aspirin alone or aspirin in combination with warfarin in decreasing risk of CHD death in secondary prevention patients (secondary prevention defined as acute MI or unstable angina within 8 weeks of admission to trial).

**Aspirin Contraindications**
- Hypersensitivity to salicylates or NSAIDs
- GI bleeding, unexplained GI blood loss, or hemophilia

**Use Aspirin with Caution**
- Anticoagulant use (warfarin/Coumadin)
- Severe nausea and vomiting or known upper GI disorders: can use suppositories (325 mg)

**Beta Blockers**
- Start in all post-MI and acute ischemic syndrome patients at 5 to 28 days post-MI.††
  - Continue indefinitely (previous recommendation was for a minimum of six months); observe usual contraindications (see right).
  - Use as needed to manage angina, rhythm or blood pressure in all other patients.

**Beta Blockers Contraindications**
- Second or third degree heart block
- Bronchospastic disease

**ACE Inhibitors Post-MI**
- Start as early as 3 days post-MI in stable high-risk patients (those with anterior MI, previous MI, or Killip class II [S3 gallop, rales, radiographic CHF]).
  - Continue indefinitely for all patients with coronary or other vascular disease, unless contraindicated.

References