

**Table 2. Guide to Primary Prevention of Cardiovascular Disease and Stroke: Risk Intervention**

Risk Intervention and Goals	Recommendations
<p>Smoking Cessation</p> <p>Goal: Complete cessation. No exposure to environmental tobacco smoke.</p>	<p>Ask about tobacco use status at every visit. In a clear, strong, and personalized manner, advise every tobacco user to quit. Assess the tobacco user's willingness to quit. Assist by counseling and developing a plan for quitting. Arrange follow-up, referral to special programs, or pharmacotherapy. Urge avoidance of exposure to secondhand smoke at work or home.</p>
<p>BP control</p> <p>Goal: &lt;140/90 mm Hg; &lt;130/80 mm Hg if renal disease, diabetes or heart failure is present.*</p>	<p>Promote healthy lifestyle modification. Advocate weight reduction; reduction of sodium intake; consumption of fruits, vegetables, and low-fat dairy products; moderation of alcohol intake; and physical activity in persons with BP of <math>\geq 140</math> mm Hg systolic or 90 mm Hg diastolic. For persons with renal insufficiency, diabetes or heart failure, initiate drug therapy if BP is <math>\geq 130</math> mm Hg systolic or <math>\geq 80</math> mm Hg diastolic. Initiate drug therapy for those with BP <math>\geq 140/90</math> mm Hg if 6 to 12 months of lifestyle modification is not effective, depending on the number of risk factors present. Add BP medications, individualized to patient characteristics (eg age, race, need for drugs with specific benefits), and compelling indications. (See Table 8C).</p>
<p>Dietary intake</p> <p>Goal: An overall healthy eating pattern.</p>	<p>Advocate consumption of a variety of fruits, vegetables, grains, low-fat or nonfat dairy products, fish, legumes, poultry, and lean meats. Match energy intake with energy needs and make appropriate changes to achieve weight loss when indicated. Modify food choices to reduce saturated fats (&lt;10% of calories), cholesterol (&lt;300 mg/d), and <i>trans</i>-fatty acids by substituting grains and unsaturated fatty acids from fish, vegetables, legumes, and nuts. Limit salt intake to &lt;6 g/d. Limit alcohol intake (<math>\leq 2</math> drinks/d in men, <math>\leq 1</math> drink/d in women) among those who drink.</p>
<p>Aspirin</p> <p>Goal: Low-dose aspirin in persons at higher CHD risk (especially those with 10-y risk of CHD <math>\geq 10\%</math>).</p>	<p>Do not recommend for patients with aspirin intolerance. Low-dose aspirin increases risk for gastrointestinal bleeding and hemorrhagic stroke. Do not use in persons at increased risk for these diseases. Benefits of cardiovascular risk reduction outweigh these risks in most patients at higher coronary risk. Doses of 75–160 mg/d are as effective as higher doses. Therefore, consider 75–160 mg aspirin per day for persons at higher risk (especially those with 10-y risk of CHD of <math>\geq 10\%</math>).</p>
<p>Blood lipid management</p> <p>Primary goal: LDL-C &lt;160 mg/dL if <math>\leq 1</math> risk factor present; LDL-C &lt;130 mg/dL if <math>\geq 2</math> risk factors are present and 10-y CHD risk is &lt;10%; LDL-C &lt;130 mg/dL (optional goal &lt;100) if <math>\geq 2</math> risk factors and 10y CHD risk 10–20%; or LDL-C &lt;100 mg/dL (optional goal &lt;70) if <math>\geq 2</math> risk factors are present and 10-y CHD risk is <math>\geq 20\%</math> or if patient has diabetes or noncoronary forms of atherosclerosis (PVD, AAA, carotid disease).<sup>†</sup></p> <p>Secondary goals (if LDL-C is at goal range): If triglycerides are &gt;200 mg/dL, then use non-HDL-C as a secondary goal; non-HDL-C &lt;190 mg/dL for <math>\leq 1</math> risk factor; non-HDL-C &lt;160 mg/dL for <math>\geq 2</math> risk factors and 10-y CHD risk <math>\leq 20\%</math>; non-HDL-C &lt;130 mg/dL for diabetics or for <math>\geq 2</math> risk factors and 10-y CHD risk &gt;20%.</p>	<p>If LDL-C is above goal range, initiate additional therapeutic lifestyle changes consisting of dietary modifications to lower LDL-C &lt;7% of calories from saturated fat, cholesterol &lt;200 mg/d, and, if further LDL-C lowering is required, dietary options (plant stanols/sterols not to exceed 2 g/d and/or increased viscous [soluble] fiber [10–25 g/d]), and additional emphasis on weight reduction and physical activity. If LDL-C is above goal range, rule out secondary causes (liver function test, thyroid-stimulating hormone level, urinalysis). After 12 weeks of therapeutic lifestyle change, consider LDL-lowering drug therapy if: <math>\geq 2</math> risk factors are present, 10-y risk is &gt;10%, and LDL-C is <math>\geq 130</math> mg/dL; <math>\geq 2</math> risk factors are present, 10-y risk is &lt;10%, and LDL-C is <math>\geq 160</math> mg/dL; or <math>\leq 1</math> risk is present and LDL-C is <math>\geq 190</math> mg/dL. Start drugs and advance dose to bring LDL-C to goal range, usually with a statin but also consider bile acid-binding resin, niacin or cholesterol absorption inhibitor (addendum). If LDL-C goal not achieved, consider combination therapy (statin + resin, statin + niacin). After LDL-C goal has been reached, consider triglyceride level: If 150–199 mg/dL, treat with therapeutic lifestyle changes; if 200–499 mg/dL, treat elevated non-HDL-C with therapeutic lifestyle changes and, if necessary, consider higher doses of statin or adding niacin or fibrate; if &gt;500 mg/dL, treat with fibrate or niacin to reduce risk of pancreatitis. If HDL-C is &lt;40 mg/dL in men and &lt;50 mg/dL in women, initiate or intensify therapeutic lifestyle changes. For higher-risk patients, consider drugs that raise HDL-C (eg niacin, fibrates, statins).</p>

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<p>Other targets for therapy: triglycerides &gt;150 mg/dL; HDL-C &lt;40 mg/dL in men and &lt;50 mg/dL in women.</p> <p>Physical activity</p> <p>Goal: At least 30 min of moderate-intensity physical activity on most (and preferably all) days of the week.</p>	<p>If cardiovascular, respiratory, metabolic, orthopedic, or neurological disorders are suspected, or if patient is middle-aged or older and is sedentary, patient should be advised to consult physician before initiating vigorous exercise program. Moderate-intensity activities (40% to 60% of maximum capacity) are equivalent to a brisk walk (15–20 min per mile). Additional benefits are gained from vigorous-intensity activity (&gt;60% of maximum capacity) for 20–40 min on 3–5 d/wk. Recommend resistance training with 8–10 different exercises, 1–2 sets per exercise, and 10–15 repetitions at moderate intensity <math>\geq 2</math> d/wk. Flexibility training and an increase in daily lifestyle activities should complement this regimen.</p>
<p>Weight management</p> <p>Goal: Achieve and maintain desirable weight (Body mass index 18.5–24.9 kg/m<sup>2</sup>). When body mass index is <math>\geq 25</math> kg/m<sup>2</sup>, waist circumference at iliac crest level <math>\leq 40</math> inches in men, <math>\leq 35</math> inches in women.</p>	<p>Initiate weight-management program through caloric restriction and increased caloric expenditure as appropriate. For overweight/obese persons, reduce body weight by 10% in first year of therapy.</p>
<p>Diabetes management</p> <p>Goals: Normal fasting plasma glucose (&lt;110 mg/dL) and near normal HbA<sub>1c</sub> (&lt;7%).</p>	<p>Initiate appropriate hypoglycemic therapy to achieve near-normal fasting plasma glucose, or as indicated by near-normal HbA<sub>1c</sub>. First-step therapy is diet and exercise. Second-step therapy is usually oral hypoglycemic drugs: sulfonylureas and/or metformin with ancillary use of acarbose and thiazolidinediones. Third-step therapy is insulin. Treat other risk factors more aggressively (eg change BP goal to &lt;130/80 mm Hg and LDL-C goal to &lt;100 mg/dL).</p>
<p>Chronic atrial fibrillation</p> <p>Goals: Normal sinus rhythm or, if chronic atrial fibrillation is present, anticoagulation with INR 2.0–3.0 (target 2.5).</p>	<p>Irregular pulse should be verified by an electrocardiogram. Conversion of appropriate individuals to normal sinus rhythm. For patients in chronic or intermittent atrial fibrillation, use warfarin anticoagulants to INR 2.0–3.0 (target 2.5). Aspirin (325 mg/d) can be used as an alternative in those with certain contraindications to oral anticoagulation. Patients &lt;65 y of age without high risk may be treated with aspirin.</p>

\* Updated and modified from original publication to include JNC 7 recommendations.

† Updated with: Grundy SM, Cleeman JI, Merz CNB, et al. Implications of Recent Clinical Trials for the National Cholesterol Education Program Adult Treatment Panel III Guidelines. *Circulation*. 2004;110:227-239.

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Chobanian AV, Bakris GL, Black HR, et al. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure—The JNC 7 Report. *JAMA*. 2003;289:19:2560-2572.