

**Table 5. Guide to Risk Reduction for Women\***

Lifestyle Factors	Goal(s)	Screening	Recommendations
Cigarette smoking	<ol style="list-style-type: none"> <li>1. Complete cessation.</li> <li>2. Avoid passive cigarette smoke.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ask about current smoking status and exposure to others' cigarette smoke as part of routine evaluation.</li> <li>2. Assess total exposure to cigarette smoke (pack-years) and prior attempts at quitting.</li> <li>3. Evaluate readiness to stop smoking.</li> </ol>	<ol style="list-style-type: none"> <li>1. At each visit, strongly encourage patient and family to stop smoking. If complete cessation is not achievable, a reduction in intake is beneficial as a step toward cessation.</li> <li>2. Reinforce nonsmoking status.</li> <li>3. Provide counseling, nicotine replacement, and other pharmacotherapy as indicated in conjunction with behavioral therapy or a formal cessation program.</li> </ol>
Physical activity	<ol style="list-style-type: none"> <li>1. Accumulate <math>\geq 30</math> min of moderate-intensity physical activity on most, and preferably all, days of the week.</li> <li>2. For weight loss or sustained weight loss, accumulate 60–90 minutes of moderate-intensity physical activity on most, and preferably all, days of the week.</li> <li>3. Women with a recent acute coronary syndrome or coronary intervention or with new-onset or chronic angina, recent cerebrovascular event, peripheral arterial disease, or current/prior heart failure and an LVEF <math>&lt; 40\%</math> should participate in a comprehensive risk-reduction regimen, such as cardiac rehabilitation or a physician-guided home or community-based program.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ask about physical activity (household work as well as occupational and leisure-time physical activity) as part of routine evaluation.</li> <li>2. In women with symptoms that suggest CVD or in previously sedentary women <math>&gt; 50</math> y old with <math>\geq 2</math> risk factors for CVD, consider a stress test<sup>†</sup> to establish safety of exercise and to guide the exercise prescription.</li> </ol>	<ol style="list-style-type: none"> <li>1. Encourage a minimum of 30 min of moderate-intensity dynamic exercise (eg, brisk walking) daily. This may be performed in intermittent or shorter bouts (<math>\geq 10</math> min) of activity throughout the day.</li> <li>2. Women who already meet minimum standards may be encouraged to become more physically active or to include more vigorous activities.</li> <li>3. Incorporate physical activity in daily activities (eg, using stairs).</li> <li>4. Muscle strengthening and stretching exercises should be recommended as part of an overall activity program.</li> <li>5. Recommend medically supervised programs for women who have had a recent MI or revascularization procedure.</li> </ol>

**Table 5. Guide to Risk Reduction for Women\* (cont'd)**

<p>Nutrition</p>	<ol style="list-style-type: none"> <li>1. AHA Step I Diet in healthy women (<math>\leq 30\%</math> fat, <math>7\%–10\%</math> saturated fat, <math>&lt;300</math> mg/d cholesterol).</li> <li>2. AHA Step II Diet in women with CVD or if further cholesterol reduction is needed (<math>\leq 30\%</math> fat, <math>&lt;7\%</math> saturated fat, and <math>&lt;200</math> mg/d cholesterol).</li> <li>3. Intake of <i>trans</i> fatty acids (eg, hydrogenated or partially-hydrogenated food products) should be as low as possible (<math>&lt;1\%</math> of energy).</li> <li>4. Limit sodium chloride (salt) intake to <math>&lt;2.3</math> g/d (approximately 1 tsp). Women with high blood pressure may require further restriction.</li> <li>5. Total dietary fiber intake of <math>25–30</math> g/d from foods.</li> <li>6. Consume <math>\geq 5</math> servings of fruits and vegetables per day.</li> <li>7. Limit alcohol intake to <math>\leq 1</math> glass of alcohol per day (1 glass = 4 oz wine, 12 oz beer, or <math>1\frac{1}{2}</math> oz 80-proof spirits). Pregnant women should abstain from drinking alcohol.</li> </ol>	<ol style="list-style-type: none"> <li>1. Assess nutritional habits as part of a routine evaluation in all women.</li> <li>2. Consider formal dietary assessment in women with hyperlipidemia, diabetes, obesity, and hypertension.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consistently encourage an overall healthy eating pattern that includes intake of a variety of fruits, vegetables, whole grains, high-fiber foods, and low-fat or non-fat dairy products (skim milk); consume fish, especially oily fish, at least twice a week, legumes, and sources of protein low in saturated fat (eg, poultry, lean meats, plant sources).</li> <li>2. Diets rich in antioxidant nutrients (eg, vitamins C and E, and beta-carotene) and folate are preferred over nutritional supplements. Note: daily supplements of <math>0.4</math> mg of folic acid are recommended for women of child-bearing age to help prevent neural tube defects. As an adjunct to diet, folic-acid supplementation may be considered in high-risk women (except after revascularization procedure) if a higher-than-normal level of homocysteine has been detected. Antioxidant vitamin supplements should not be used to prevent CVD pending the results of ongoing trials.</li> <li>3. Omega-3 fatty acid capsules may be considered in women with CHD (<math>850–1000</math> mg EPA and DHA) and those with high triglyceride levels (<math>2–4</math> mg).</li> </ol>
<p>Weight management</p>	<ol style="list-style-type: none"> <li>1. Maintain or lose weight through an appropriate balance of physical activity, caloric intake, and formal behavioral programs when indicated to achieve ideal BMI.</li> <li>2. Target BMI (weight in kilograms divided by height in meters squared) between <math>18.5</math> and <math>24.9</math> <math>\text{kg}/\text{m}^2</math> (BMI of <math>25</math> <math>\text{kg}/\text{m}^2 = 110\%</math> of desirable body weight).</li> <li>3. Desirable waist circumference <math>&lt;88</math> cm (<math>&lt;35</math> inches) in women with a BMI of <math>25–34.9</math> <math>\text{kg}/\text{m}^2</math>.</li> </ol>	<p>Measure patient's weight and height, calculate BMI, and measure waist circumference as part of a periodic evaluation.</p> <p>Note: BMI and waist circumference are used for diagnosis, and measurement of height and weight are used for follow-up.</p>	<ol style="list-style-type: none"> <li>1. Encourage gradual and sustained weight loss in persons whose weight exceeds the ideal weight for their height.</li> <li>2. Formal nutritional counseling is encouraged for women with hypertension, hyperlipidemia, or elevated glucose levels associated with overweight.</li> <li>3. The recommended weight gain during pregnancy is <math>25–35</math> lb if the patient's pre-pregnancy weight is normal. Adjust for multiple gestation and pre-pregnancy weight (eg, overweight women should gain <math>15–25</math> lb, obese women, <math>&lt;15</math> lb).</li> </ol>

**Table 5. Guide to Risk Reduction for Women\* (cont'd)**

Psychosocial factors	<ol style="list-style-type: none"> <li>1. Positive adaptation to stressful situations.</li> <li>2. Improved quality of life.</li> <li>3. Maintain or establish social connections.</li> </ol>	<ol style="list-style-type: none"> <li>1. Assess presence of stressful situations and response to stress as part of a routine evaluation.</li> <li>2. Evaluate for depression, especially in women with recent cardiovascular events.</li> <li>3. Assess social support system and evaluate for social isolation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Encourage positive coping mechanisms for stress (eg substitute physical activity for overeating or excessive smoking in response to stress).</li> <li>2. Encourage adequate rest and relief for women who are caretakers of others.</li> <li>3. Consider treatment of depression and anxiety when appropriate. Encourage participation in social activities or volunteer work for socially isolated women.</li> </ol>																		
Risk Factors	Goal(s)	Screening	Recommendations																		
Blood pressure (BP)	<ol style="list-style-type: none"> <li>1. Achieve and maintain BP of &lt;120/80 mm Hg.</li> <li>2. In pregnant women with hypertension, the goal of treatment is to minimize short-term risk of elevated BP in the mother while avoiding therapy that may compromise the well-being of the fetus.</li> </ol>	<ol style="list-style-type: none"> <li>1. Measure BP as part of a routine evaluation.</li> <li>2. Follow-up is based on initial measurement as follows: <table border="1" data-bbox="953 708 1360 1211"> <thead> <tr> <th>SBP mm Hg</th> <th>DBP mm Hg</th> <th>Follow-up</th> </tr> </thead> <tbody> <tr> <td>&lt;120</td> <td>&lt;80</td> <td>Recheck in 2 y</td> </tr> <tr> <td>120–139</td> <td>80–89</td> <td>Recheck in 1 y</td> </tr> <tr> <td>140–159</td> <td>90–99</td> <td>Confirm in 2 mo</td> </tr> <tr> <td>160–179</td> <td>100–109</td> <td>Evaluate in 1 mo</td> </tr> <tr> <td>≥180</td> <td>≥110</td> <td>Evaluate in 1 wk</td> </tr> </tbody> </table> <p>Follow-up screening may be modified on the basis of prior history, symptoms, presence of other risk factors, and end organ damage.</p> </li> <li>3. In pregnant women with hypertension, evaluate for preeclampsia.</li> </ol>	SBP mm Hg	DBP mm Hg	Follow-up	<120	<80	Recheck in 2 y	120–139	80–89	Recheck in 1 y	140–159	90–99	Confirm in 2 mo	160–179	100–109	Evaluate in 1 mo	≥180	≥110	Evaluate in 1 wk	<ol style="list-style-type: none"> <li>1. Promote the lifestyle behaviors described previously (weight control, physical activity, moderation in alcohol intake) and moderate sodium restriction, and increased consumption of fresh fruits, vegetables, and low-fat dairy products to encourage an optimal BP of &lt;120/80 mm Hg.</li> <li>2. Pharmacotherapy is indicated when BP is ≥140/90 mm Hg or even lower in the setting of BP-related target organ damage or diabetes ≤130/80 mm Hg. Thiazide diuretics should be part of the drug regimen for most patients unless contraindicated. If there are compelling indications for other agents in specific vascular diseases, or if the women are considered high risk, initial treatment should be with β-blockers and/or ACE inhibitors/ARBs, with addition of other drugs such as thiazides as needed.</li> <li>3. In pregnant women with hypertension, reduction of DBP to 90–100 mm Hg is recommended.</li> </ol>
SBP mm Hg	DBP mm Hg	Follow-up																			
<120	<80	Recheck in 2 y																			
120–139	80–89	Recheck in 1 y																			
140–159	90–99	Confirm in 2 mo																			
160–179	100–109	Evaluate in 1 mo																			
≥180	≥110	Evaluate in 1 wk																			

**Table 5. Guide to Risk Reduction for Women\* (cont'd)**

Risk Factors	Goal(s)	Screening	Recommendations
Lipids, lipoproteins	LDL-C <100 mg/dL HDL-C >50 mg/dL TG <50 mg/dL Non-HDL-C <130 mg/dL *LDL-C <70 mg/dL is reasonable in very high-risk women		<ol style="list-style-type: none"> <li>1. Promote lifestyle therapy in all women to achieve lipid goals (diet, weight management, physical activity, and avoidance of tobacco). If a women is high-risk or has hypercholesterolemia, intake of saturated fat should be &lt;7% and TC &lt;200 mg/dL.</li> <li>2. Utilize LDL-C-lowering drug therapy simultaneously with lifestyle therapy as indicated:                             <ul style="list-style-type: none"> <li>• High-risk (CHD, other atherosclerotic CVD, or diabetes or 10-year absolute risk &gt;20%) achieve LDL-C &lt;100 mg/dL</li> <li>• Very-high-risk (CHD, other atherosclerotic CVD plus multiple or poorly controlled risk factors, and diabetes) LDL-C &lt;70 mg/dL (may require combination therapy)</li> <li>• Others at risk                                     <ul style="list-style-type: none"> <li>– 10-year risk 10%–20% plus multiple risk factors if LDL-C ≥130 mg/dL</li> <li>– &lt;10-year risk plus multiple risk factors if LDL-C ≥160 mg/dL</li> <li>– Regardless of the presence or absence of risk factors if the LDL-C ≥190 mg/dL</li> </ul> </li> </ul> </li> <li>3. Pharmacotherapy for low HDL or elevated non-HDL-C in high-risk woman:                             <ul style="list-style-type: none"> <li>• Utilize niacin or fibrate therapy when HDL-C is low or non-HDL-C is elevated in high-risk women after LDL-C goal is reached</li> </ul> </li> <li>4. Pharmacotherapy for low HDL-C or elevated non-HDL-C in other at risk women:                             <ul style="list-style-type: none"> <li>• Consider niacin or fibrate therapy when HDL-C is low or non-HDL-C is elevated after LDL-C goal is reached in women with multiple risk factors and a 10-year absolute risk 10%–20%.</li> </ul> </li> </ol>
Antioxidant supplementation  Folic acid	<ol style="list-style-type: none"> <li>1. Antioxidant vitamin supplements (eg, vitamins E and C, and beta-carotene) will not be used for the primary or secondary prevention of CVD.</li> <li>2. Folic acid will be used as a supplement in childbearing years to prevent neural tube defects.</li> </ol>		<ol style="list-style-type: none"> <li>1. Antioxidant vitamin supplements (eg, vitamins E and C, and beta-carotene) should not be used for the primary or secondary prevention of CVD.</li> <li>2. Folic acid, with or without B6 and B12 supplementation, should not be used for the primary or secondary prevention of CVD.</li> <li>3. Folic acid supplementation should be used in childbearing years to prevent neural tube defects.</li> </ol>

**Table 5. Guide to Risk Reduction for Women\* (cont'd)**

Diabetes	<p><i>For patients with diabetes:</i></p> <ol style="list-style-type: none"> <li>Maintain blood glucose: Preprandial = 80–120 mg/dL; bedtime = 100–140 mg/dL.</li> <li>Maintain HbA1C &lt;7%.</li> <li>LDL-C: Many authorities believe that LDL-C should be &lt;100 mg/dL in all patients with diabetes.</li> <li>TG &lt;150 mg/dL.</li> <li>Control BP to goal of &lt;130/80 mm Hg.</li> </ol>	<ol style="list-style-type: none"> <li>Monitor glucose and HbA1c as part of a routine periodic evaluation in women with diabetes.</li> <li>Screen for diabetes (fasting glucose &gt;125 mg/dL or &gt;200 mg/dL 2 h after 75 g glucose) as part of a periodic examination in women with risk factors for diabetes, such as obesity.</li> </ol>	<ol style="list-style-type: none"> <li>Encourage adoption of American Diabetes Association Diet (&lt;30% fat, &lt;10% saturated fat, 6%–8% polyunsaturated fat, cholesterol &lt;300 mg/d).</li> <li>A low-calorie diet may be recommended for weight loss.</li> <li>Encourage regular physical activity.</li> <li>Pharmacotherapy with oral agents or insulin should be used when indicated.</li> </ol>
Pharmacologic Interventions	Goal(s)	Screening	Recommendations
Hormone replacement Therapy (HRT)	<ol style="list-style-type: none"> <li>Hormone therapy and selective estrogen-receptor modulators (SERMs) should not be used for the primary or secondary prevention of CVD.</li> <li>Initiation or continuation of therapy in women for whom the potential benefits may exceed the potential risks of therapy. (Short-term therapy is indicated for treatment of menopausal symptoms.)</li> <li>Minimize risk of adverse side effects through careful patient selection and appropriate choice of therapy.</li> </ol>	<ol style="list-style-type: none"> <li>Review menstrual status of women &gt;40 y old.</li> <li>If menopausal status is unclear, measure follicle-stimulating hormone level.</li> </ol>	<ol style="list-style-type: none"> <li>Counsel all women about the potential benefits and risks of HRT, beginning at age 40, or as requested.</li> <li>Individualize decision based on prior history and risk factors for CVD as well as risks of thromboembolic disease, gallbladder disease, osteoporosis, breast cancer, and other health risks.</li> <li>Combined estrogen plus progestin hormone therapy should not be initiated or continued to prevent CVD in postmenopausal women.</li> <li>Other forms of menopausal hormone therapy (eg, unopposed estrogen) should not be initiated or continued to prevent CVD in postmenopausal women.</li> </ol>
Oral contraceptives	<ol style="list-style-type: none"> <li>Minimize risk of adverse cardiovascular effects while preventing pregnancy.</li> <li>Use the lowest effective dose of estrogen/progestin.</li> </ol>	Determine contraindications and cardiovascular risk-factor status of women who are considering using oral contraceptives.	<ol style="list-style-type: none"> <li>Use of oral contraceptives is relatively contraindicated in women ≥35 y old who smoke.</li> <li>Women with a family history of premature heart disease should have lipid analysis before taking oral contraceptives.</li> <li>Women with significant risk factors for diabetes should have glucose testing before taking oral contraceptives.</li> <li>If a woman develops hypertension while using oral contraceptives, she should be advised to stop taking them.</li> </ol>

**Table 5. Guide to Risk Reduction for Women\* (cont'd)**

Antiplatelet agents/anticoagulants	Prevention of clinical thrombotic and embolic events in women with established CVD.	<ol style="list-style-type: none"> <li>1. Determine if contraindications to therapy exist at the time of the initial cardiovascular event.</li> <li>2. Evaluate ongoing compliance, risk, and side effects as part of a routine follow-up evaluation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Routine use of aspirin in lower-risk women is not recommended pending the results of ongoing trials.</li> <li>2. If no contraindications, women with atherosclerotic CVD should use aspirin 75–325 mg/d.</li> <li>3. Clopidogrel should be used to prevent vascular events in women who cannot take aspirin.</li> <li>4. Among women with chronic or paroxysmal atrial fibrillation, warfarin should be used to maintain the INR 2.0–3.0 unless they are considered to be at low risk for stroke (&lt;1%/y) or at high risk for bleeding.</li> <li>5. Aspirin (325 mg) should be used in women with chronic or paroxysmal atrial fibrillation with contraindication to warfarin or at low risk for stroke (&lt;1%/y).</li> </ol>
Pharmacological Interventions	Goal(s)	Screening	Recommendations
β-blockers	Reduction of reinfarction rate, incidence of sudden death, and overall mortality in women after MI.	<ol style="list-style-type: none"> <li>1. Determine if contraindications to therapy exist at the time of the initial cardiovascular event.</li> <li>2. Evaluate ongoing compliance, risk, and side effects as part of a routine follow-up evaluation.</li> </ol>	Start within hours of hospitalization in women with an evolving MI, acute coronary syndrome, or left ventricular dysfunction with or without heart failure symptoms, without contraindications. If not started acutely, treatment should begin within a few days of the event and continue indefinitely. Use indefinitely in all women who have had a MI, acute coronary syndrome, or other chronic ischemic syndromes with left ventricular dysfunction regardless of heart failure symptoms, unless contraindicated.
ACE inhibitors/ARBs Aldosterone blockade	To reduce morbidity and mortality among MI survivors and patients with left ventricular dysfunction.	<ol style="list-style-type: none"> <li>1. Determine if contraindications to therapy exist at the time of the initial cardiovascular event.</li> <li>2. Evaluate ongoing compliance, risk, and side effects as part of a routine follow-up evaluation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Start early during hospitalization for MI unless hypotension or other contraindications exist. Continue indefinitely for all high-risk women and those with left ventricular dysfunction (ejection fraction ≤40%) or symptoms of congestive heart failure.</li> <li>2. ARBs should be used in high-risk women with clinical evidence of heart failure or an ejection fraction &lt;40% or with diabetes who are intolerant to ACE inhibitors.</li> <li>3. Discontinue ACE inhibitors if a woman becomes pregnant.</li> <li>4. Use aldosterone blockade after MI in women who do not have significant renal dysfunction or hyperkalemia who are already receiving therapeutic doses of an ACE inhibitor and β-blocker, and have LVEF ≤40% with symptomatic heart failure.</li> </ol>

CVD = cardiovascular disease; BMI = body mass index; SBP = systolic blood pressure; DBP = diastolic blood pressure; TC = total cholesterol; TG = triglycerides; ERT = estrogen replacement therapy; HRT = hormone replacement therapy; LVEF = left ventricular ejection fraction; MI = myocardial infarction; EPA = eicosapentaenoic acid; DHA = docosahexaenoic acid; ACE inhibitors = angiotensin-converting enzyme inhibitor; ARBs = angiotensin II receptor blockers

"High risk" is defined as CHD or risk equivalent, or 10-year absolute CHD risk >20%.

"Intermediate risk" is defined as 10-year absolute CHD risk 10%–20%.

"Lower risk" is defined as 10-year absolute CHD risk <10%.

"Very high risk" is defined as CHD, other atherosclerotic CVD plus multiple or poorly controlled risk factor and diabetes.

\* Updated and modified from original publication to include JNC 7 recommendations. Also updated with Pearson TA, Blair SN, Daniels SR, et al. AHA Guidelines for Primary Prevention of Cardiovascular Disease and Stroke: 2002 Update. *Circulation*. 2002;106:388-391.

<sup>†</sup>The choice of test modality should be based on the resting ECG, physical ability to exercise, and local expertise and technologies.

<sup>‡</sup>The ACC and the AHA recommend cholesterol screening guidelines as outlined by the National Cholesterol Education Program (measure TC and HDL-C at least once every 5 years in all adults ≥20 y old). The consensus panel recognizes that some organizations use other guidelines, such as the US Preventive Services Task Force, which recommends that cholesterol screening in women without risk factors begin at age 45 y.

Mosca L, Grundy SM, Judelson D, et al. Guide to Preventive Cardiology for Women. *Circulation*. 1999;99:2480-2484.

Pearson TA, Blair SN, Daniels SR, et al. AHA Guidelines for Primary Prevention of Cardiovascular Disease and Stroke: 2002 Update. *Circulation*. 2002;106:388-391.

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.

Updated with: Mosca L, Appel LJ, Benjamin EJ, et al. AHA Guidelines. Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women. *Circulation*. 2004;109:672-693.

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.

Updated with: Mosca L, Banka CL, Benjamin EJ, et al, for the Expert Panel/Writing Group. Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women: 2007 Update. *Circulation*. 2007;115:1481-1501.