

# PREVENTING CARDIOVASCULAR EVENTS IN PERSONS AT RISK or WITH ESTABLISHED CV DISEASE<sup>1-14</sup>

## Take Heart Alaska Secondary Prevention Task Force 2004

\*\*\*Adapted from the AHA/ACC Scientific Statements & Guidelines listed in the references.

CVD RISK FACTORS	CRITERIA FOR RISK	Lifestyle Modifications	Clinical Management Interventions	GOALS
<b>Dyslipidemia</b> 1, 2, 3, 5, 6, 7, 9, 10	<b>Screening for Lipid Risk Factors</b>  <b>High Total Cholesterol</b> <ul style="list-style-type: none"> <li>Borderline High: ≥ 200-239 mg/dL</li> <li>High: ≥ 240 mg/dL</li> </ul> <b>High LDL<sup>1</sup></b> : Primary target for lipid-lowering therapy. <ul style="list-style-type: none"> <li>Very High: ≥ 190 mg/dL and above.</li> <li>High: ≥ 160-189 mg/dL</li> <li>Borderline High: ≥ 130-159 mg/dL</li> <li>Above Optimal: ≥ 100-129 mg/dL</li> </ul> <b>High Triglycerides (TG)</b> <sup>1, 2, 3, 6</sup> <ul style="list-style-type: none"> <li>Very High: ≥ 500 mg/dL</li> <li>High: 200-499 mg/dL</li> <li>Borderline high: 150-199 mg/dL</li> </ul> <b>Low HDL</b> <ul style="list-style-type: none"> <li>&lt; 40 mg/dL for men</li> <li>&lt; 50 mg/dL for women<sup>6</sup></li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Encourage weight loss/management.</li> <li>Limit diet to &lt;7% saturated fats and &lt; 200 mg/dL of cholesterol from total calories.</li> <li>Increase consumption of monounsaturated fatty acids (olive/peanut/ canola oils, nuts/peanut butter, avocado, olives).</li> <li>Suggest plant stanols/sterols (2/day) to lower cholesterol.</li> <li>Include 6 oz. of fish/wk, specifying tuna, herring or salmon.</li> <li>Medical nutrition therapy and/or other education as indicated.</li> <li>Promote and/or increase daily physical activity.</li> </ul>	<b>Initial Assessment:</b> <ul style="list-style-type: none"> <li>Assess fasting lipid panel (FLP) for baseline. <b>LDL is primary focus.</b></li> <li>If LDL-C cannot be calculated due to elevated triglyceride level, order LDL-C direct measurement<sup>7</sup>.</li> <li>FLP within 24 hours of hospitalization for an acute event and re-check FLP in 12 weeks.</li> <li>Periodically re-check FLP thereafter until goal values are met.</li> </ul> <b>High LDL Therapy Options:</b> <ul style="list-style-type: none"> <li>Evaluate for 10 year CVD risk<sup>3</sup>.</li> <li>Start with lipid lowering agent – statin preferred. (If patients are hospitalized, start statin).</li> <li>If LDL is ≥ 130 mg/dL (baseline or on treatment) start or intensify lipid lowering therapy to reach goal (statin preferred).</li> <li>If LDL 100- 129 mg/dL (baseline or on treatment):                             <ul style="list-style-type: none"> <li>Start lipid lowering therapy (statin preferred).</li> <li>Consider combined drug therapy (statin + fibrate or niacin if low HDL or high TG).</li> </ul> </li> <li>If LDL is &lt; 100 mg/dL (baseline or on treatment): lipid lowering therapy should be considered for high risk.</li> </ul> <b>High Triglycerides Treatment Options:</b> <ul style="list-style-type: none"> <li>If TG ≥ 500 mg/dL:                             <ul style="list-style-type: none"> <li>Treat TG first to prevent pancreatitis.</li> <li>Initiate/resume lipid-lowering therapy (statin preferred).</li> </ul> </li> <li>If TG 200-499mg/dL:                             <ul style="list-style-type: none"> <li>Start fibrate or niacin.</li> </ul> </li> </ul> <b>Low HDL Therapy Options:</b> <ul style="list-style-type: none"> <li>If HDL &lt; 40 mg/dL for men or &lt; 50 mg/dL for women:                             <ul style="list-style-type: none"> <li>First attain LDL goal.</li> <li>Then, intensify weight management and physical activity.</li> </ul> </li> </ul>	<b>Total Cholesterol Desired</b> < 200 mg/dL  <b>LDL Desired</b> < 100mg/dL <70mg/dL for very high risk patients <sup>15</sup>  <b>Triglycerides Desired</b> < 150 mg/dL  <b>HDL Desired</b> ≥ 40 mg/dL for men ≥ 50 mg/dL optimal for women <sup>6</sup> ≥ 60 is a negative risk factor
<b>*High Blood Pressure</b> 4, 6, 10, 13  <i>*Accurate blood pressure measurement is essential</i>	<b>Screening for Hypertension</b> <ul style="list-style-type: none"> <li>Prehypertension: ≥ 120-139/ or ≥ 80-89 mmHg</li> <li>Hypertension Stage I: ≥ 140-159/ or ≥ 90-99 mmHg</li> <li>Hypertension Stage II: ≥ 160/ or ≥ 100 mmHg</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Encourage weight loss/maintenance.</li> <li>Low sodium diet- 1500 to 2400 mg/day<sup>13</sup>.</li> <li>DASH Diet<sup>13</sup> - low sodium, high fruits &amp; vegetables, high calcium, low alcohol.</li> <li>Medical nutrition therapy and/or other education as indicated.</li> <li>Promote and/or increase daily physical activity.</li> </ul>	<b>Initial Therapy Options for Stage 1 Hypertension:</b> <ul style="list-style-type: none"> <li>THIAZ, BB, ACEI, ARB, CCB, or combination.</li> </ul> <b>Therapy Options for Stage 2 Hypertension:</b> <ul style="list-style-type: none"> <li>2 or more drug combination for most –THIAZ and ACEI, or ARB, or BB, or CCB.</li> </ul> <b>Therapy for Comorbid Conditions:</b> <ul style="list-style-type: none"> <li>Heart failure - THIAZ, ACEI, ARB, BB, ALDO ANT.</li> <li>Post MI - BB, ACEI.</li> <li>High CVD risk - THIAZ, BB, ACEI, CCB.</li> <li>Diabetes - ACEI, ARB, THIAZ, BB, CCB.</li> <li>Chronic renal disease - ACEI, ARB.</li> <li>Recurrent stroke prevention - THIAZ, ACEI.</li> </ul> <p>Key: THIAZ = thiazide diuretic, ACEI - angiotensin converting enzyme inhibitor, ARB = angiotensin receptor blocker, BB = beta-blocker, CCB = calcium channel blocker, ALDO ANT = aldosterone antagonist.</p>	<b>Blood Pressure Control: Desired</b> <120 /and < 80 mmHg  <b>HTN Treatment Goal:</b> Achieve at least <140/<90 mmHg  <b>Comorbidities:</b> HTN + diabetes and/or kidney disease goal - <130/<80 mmHg

**Note: This practitioner's tool was developed to provide guidance to providers and is not intended to replace or preclude clinical judgment.**

Alaska Department of Health & Social Services, Division of Public Health, Section of Epidemiology.

Adapted from the Wisconsin Department of Health & Family Services, Division of Public Health, Bureau of Community Health and Prevention – PPH 43073

Download tool from the Cardiovascular Health Program's website: <http://partners.hss.state.ak.us/takeheart/SecondaryPrevention.htm>

CVD RISK FACTORS	CRITERIA FOR RISK	Lifestyle Modifications	Clinical Management Interventions	GOALS
<b>Metabolic Syndrome</b> 1, 2, 3, 4, 5, 6, 8, 10, 14	<b>Any Three (3) of the Following:</b> <ul style="list-style-type: none"> <li>Central Obesity - waist circumference &gt; 40 inches for men &gt; 35 inches for women.</li> <li>Triglycerides ≥ 150 mg/dL</li> <li>FPG ≥ 100 mg/dL - &lt; 126 mg/dL</li> <li>Elevated BP ≥ 130/≥ 85 mm Hg</li> <li>HDL &lt; 40 mg/dL for men.</li> <li>HDL &lt; 50 mg/dL for women.</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Encourage weight loss/maintenance.</li> <li>Medical nutrition therapy and/or other education as indicated.</li> <li>Promote and/or increase daily physical activity.</li> </ul>	<b>Therapy Options:</b> <ul style="list-style-type: none"> <li>Clinical management of dyslipidemia to <b>Dyslipidemia Goals</b>.</li> <li>Lowering blood pressure to <b>BP control goal</b>.</li> <li>Reduction of insulin resistance through achievement of <b>Obesity and Physical Activity Goals</b>.</li> <li>Start and continue with Aspirin (ASA) 75-325mg unless contraindicated.</li> </ul> <p><i>The evidence that ASA and other antiplatelet therapy can reduce risk is compelling and suggests a role for platelet hyperaggregability.</i></p>	<b>Improved Metabolic Risk Factors</b>
<b>Diabetes</b> 1, 2, 3, 4, 6, 10, 11, 12	Diabetes is regarded as a CHD risk equivalent with or without the presence of clinical atherosclerotic disease <sup>3, 4</sup> .	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Encourage weight loss/maintenance.</li> <li>Medical nutrition therapy and diabetes education.</li> <li>Promote and/or increase daily physical activity.</li> </ul>	<b>Therapy Options:</b> <ul style="list-style-type: none"> <li><b>Single therapy options:</b> Insulin secretagogues, biguanides, thiazolidinediones (TZD's), alpha glucosidase inhibitors, Insulin, as dictated by A1C.</li> <li><b>Combination Therapy:</b> as dictated by A1C. Add oral agent(s) and/or insulin. Substitute or intensify insulin regime as needed.</li> </ul> <b>Additional Considerations for Treatment/Monitoring:</b> <ul style="list-style-type: none"> <li>Lowering blood pressure<sup>4</sup>.</li> <li>Flu Vaccination</li> <li>Managing dyslipidemia<sup>3</sup>.</li> <li>ASA or other antiplatelet agent.</li> <li>Monitor kidney function with albumin/creatinine ratio<sup>11</sup>.</li> </ul>	<b>A1C &lt; 7.0%</b>  <b>Blood Pressure: &lt; 130/ &lt; 80 mm Hg</b>  <b>Lipids in Desired Range</b>
<b>Obesity</b> 1, 2, 4, 6, 9, 10	<ul style="list-style-type: none"> <li><b>Overweight:</b> BMI ≥ 25 - 29.9 kg/m<sup>2</sup></li> <li><b>Stage I Obesity:</b> BMI ≥ 30 - 34.9 kg/m<sup>2</sup></li> <li><b>Stage II Obesity</b> BMI ≥ 35-39.9 kg/m<sup>2</sup></li> <li><b>Stage III Obesity:</b> BMI ≥ 40 kg/m<sup>2</sup></li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Encourage weight loss/maintenance.</li> <li>Medical nutrition therapy and/or other education as indicated.</li> <li>Promote and/or increase daily physical activity.</li> </ul>	<b>Therapy Options:</b> <ul style="list-style-type: none"> <li>Measure height and weight.</li> <li>Calculate BMI: BMI = kg/m<sup>2</sup> or wt. in pounds x 704.5 ÷ ht. in inches<sup>2</sup>.</li> <li>Assess for impaired fasting glucose: fasting plasma glucose (FPG) ≥ 100 - &lt; 126 mg/dL.</li> <li><b>Assess for comorbidities and treat.</b></li> <li>Assess for other associated diseases: gynecological abnormalities, osteoarthritis, gallstones.</li> </ul>	<b>Weight loss: 5-7% of body weight or BMI of &lt; 25 kg/m<sup>2</sup></b>
<b>Physical Inactivity</b> 1, 2, 3, 6, 4, 10	<ul style="list-style-type: none"> <li>Inactivity is defined as: &lt; 30 minutes of moderate physical activity 5 times or more per week.</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Promote and/or increase daily physical activity.</li> </ul>	<b>Therapy Options:</b> <ul style="list-style-type: none"> <li>Evaluate for sedentary lifestyle and occupational level of activity.</li> <li>Promote physical activity.</li> <li>Prescribe appropriate activities and/or refer moderate to high-risk patients to medically supervised activity programs.</li> <li>Re-assess at every visit.</li> </ul>	<b>At least 30 minutes of moderate physical activity daily.</b>
<b>Tobacco Use</b> 1, 2, 6	<ul style="list-style-type: none"> <li>Cigarette smoking.</li> <li>Pipe smoking.</li> <li>Chewing tobacco.</li> <li>Environmental exposure.</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Tobacco cessation.</li> <li>Reduce environmental exposure.</li> </ul>	<b>Therapy Options:</b> <ul style="list-style-type: none"> <li>Assess history of tobacco use or environmental exposure.</li> <li>Provide information on smoking cessation programs.</li> <li>Encourage non-prescription and/or prescription cessation products.</li> <li>Refer for support/counseling, e.g., stress reduction, nutrition education.</li> <li>Re-assess every visit.</li> </ul> <p><b>Alaska Quit Line: 1-888-842-7848</b></p>	<b>Tobacco Cessation</b>
<b>Family History</b> 3, 4, 6	<ul style="list-style-type: none"> <li>First degree relative with early-onset atherosclerotic CVD, &lt; 55 years in men and &lt; 65 years in women.</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Medical nutrition therapy and/or other education as indicated.</li> <li>Promote and/or increase physical activity.</li> </ul>	<b>Therapy Options:</b> <ul style="list-style-type: none"> <li>Obtain family history of CVD and provide family counseling as appropriate.</li> <li>Evaluate for 10 year CVD risk<sup>3</sup>.</li> <li><b>Treat modifiable risk factors:</b> hypertension, diabetes, dyslipidemia, metabolic syndrome, established coronary heart disease, sleep apnea.</li> </ul>	<b>Lifestyle Changes</b>  <b>Control of Modifiable Risk Factors</b>

\*\*\*1. AHA/ACC Guidelines for Preventing Heart Attack and Death in Patients With Atherosclerotic Cardiovascular Disease: 2001 Update. 2. AHA Guidelines for Primary Prevention of Cardiovascular Disease and Stroke 2002 Update. 3. ATP III, NIH Pub. # 02-5215, September 2002. 4. JNC 7, NIH Pub # 03-5233, May 2003, cites diabetes as a CHD risk equivalent with or without the presence of clinical atherosclerotic disease. 5. Triglyceride values exceeding 400mg/dL are generally considered too high to calculate LDL-C, but laboratory thresholds may vary. ATP III, pg. III-6. 6. AHA Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women, February 2004. 7. Non-HDL cholesterol = total cholesterol minus HDL cholesterol. ATP III, pg. II-7. 8. The presence of metabolic syndrome accentuates the risk accompanying elevated LDL cholesterol. Modification of atherogenic dyslipidemia, hypertension and the prothrombotic state will reduce the risk for CHD. ATP III, pg. II-26. 9. NHLBI Practical Guide to Obesity, Oct. 2000. 10. Physical Activity Fundamental to Preventing Disease, HHS, June 2002. 11. Essential Diabetes Mellitus Care Guidelines, WI Diabetes Advisory Group, April 2001. 12. Medical Management of DM: The AACE System of Intensive Diabetes Self-Management, 2002 Update, Endocrine Practice, (Suppl. 1), January-February 2002. 13. Facts About the DASH Eating Plan, NIH Pub # 03-4082, Updated May 2003. 14. AHA/NHLBI/ADA Conference Proceedings: Clinical Management of Metabolic Syndrome, Circulation, January 2004. 15. NCEP Update on ATPIII Guidelines, Circulation 2004; 110:227-239.