Primary and Secondary Prevention of Cardiovascular Disease

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AHA Diet and Lifestyle Recommendations

- Balance calorie intake and physical activity to achieve or maintain a healthy body weight
- Consume a diet rich in vegetables and fruit
- Choose whole-grain, high fiber foods
- Consume fish, especially oily fish, at least twice a week

Diet

- Limit your intake of saturated fat to <7% of energy, trans fat to <1%, Cholesterol to <300 mg/d by choosing lean meats and vegetable alternatives; fat free, 1% fat, and low-fat diet dairy products; and minimizing intake of partially hydrogenated fats
- Minimize your intake of beverages and foods with added sugars
- Choose and prepare foods with little or no salt

Diet

- If you consume alcohol, do so in moderation, defined as 1 drink per day for women and 2 drinks per day for men
- When you eat food prepared outside of the home, follow the AHA diet and lifestyle recommendations

Physical Activity

- All health adults age 18 to 65 years need moderate-intensity aerobic physical activity for a minimum of 30 minutes on 5 days each week or vigorous-intensity aerobic activity for a minimum of 20 minutes on 3 days each week

Tobacco

- Goal: complete cessation of tobacco use. No exposure to environmental tobacco smoke
- Recommendation: ask about tobacco use status at every visit.

Weight

- Goal: Achieve and maintain desirable weight (BMI 18.5 – 24.9 kg/m2)
- Goal: Waist circumference at iliac crest < 40 inches in men or < 35 inches in women

Blood Pressure

- Normal: < 120/80
- Prehypertension: 120-139/80-89
- Stage 1 hypertension 140-159/90-99
- Stage 2 hypertension >160/100
- Goal on antihypertensive therapy: <140/90

Lipids

- Step 1: Assess risk factors: Diabetes, current smoking, hypertension, family history of premature CHD (male < 55; female < 65)
- All patients over 18 years of age should have lipid panel if they have at least 1 risk factor

Lipids

- Step 3: add HDL determination to risk factors: HDL < 40 mg/dL in men and < 50 mg/dL in women
- Step 4: Determine LDL goal based on risk factor stratification: 0-1 risk factor, goal LDL is < 160;
- Patients with 2 or more risk factors should have global risk factor score analysis to determine 10 year risk of CHD

Third Report of the NCEP Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) (27)

Management of LDL Cholesterol in Persons Beginning With 10-Year Risk Assessment (27)

10-Year Risk	LDL Goal	LDL Level at Which to Initiate TLC	LDL Level at Which to Consider Drug Therapy (After TLC)
>20%	<100 mg/dL	≥100 mg/dL	Start drug therapy simultaneously with dietary therapy
10%–20%	<130 mg/dL	≥130 mg/dL	≥130 mg/dL
<10%: Multiple (2+) risk factors	<130 mg/dL	≥130 mg/dL	≥160 mg/dL
0–1 risk factor	<160 mg/dL	>160 mg/dL	>190 mg/dL†

Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women: 2007 Update (25)

Utilize LDL-C–lowering therapy if LDL-C level is ≥130 mg/dL with lifestyle therapy and there are multiple risk factors and 10-year absolute risk of 10% to 20% (*Class I, Level of Evidence B*).

Utilize LDL-C–lowering therapy if LDL-C level is ≥160 mg/dL with lifestyle therapy and multiple risk factors, even if 10-year absolute risk is <10% (*Class I, Level of Evidence B*).

Utilize LDL-C–lowering therapy if LDL-C is ≥190 mg/dL regardless of the presence or absence of other risk factors or CVD on lifestyle therapy (*Class I, Level of Evidence B*).

Method of Reporting

Aspirin Use

- Consider use of aspirin 75-162 mg/d in patients at greater than 20% ten year risk of CHD if the benefit is not outweighed by risk of gastrointestinal bleeding or hemorrhagic stroke

Diabetes

- Goal is Hemoglobin A1C of < 7%

Secondary Prevention

- Diet: same recommendations as for primary prevention; optional use of plant sterols and stanols to reduce LDL; reduce dietary cholesterol to <200 mg/dL daily
- Physical activity recommendations same; consider resistance training 2 times per week; advise cardiac rehabilitation programs for patients post-MI, post-revascularization, or history of heart failure

Tobacco Use

- Ask about tobacco use at every visit
- 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 environmental tobacco smoke at work and home

Blood Pressure

- For patients with blood pressure >140/90 mmHg treat initially with beta-blockers and/or ACE inhibitors with addition of other drugs as needed to achieve goal blood pressure

Lipid Management

- Goal LDL is < 100 mg/dL; for very high risk patients (post ACS, uncontrolled risk factors, diabetes) 70 mg/dL is optional goal
- If triglycerides are 200 to 499 mg/dL, non-HDL-C should be <130

Antiplatelet therapy

- Start aspirin 75-162 mg/d in ACS and post CABG patients and continue indefinitely unless contraindicated
- Patients post PCI should receive aspirin 325 mg for 1 month post BMS, 3 months post SES, 6 month post PES, ZES, or EES
- Start and continue clopidogrel 75 mg/d in combination with aspirin for up to 12 months in patients after ACS or PCI (> 1 month for BMS, > 1 yr for DES)

Warfarin

- Manage warfarin to INR of 2.0-3.0 for atrial fibrillation or flutter and in post-myocardial infarction patients when clinically indicated (eg. Atrial fibrillation, left ventricular thrombus)

Renin-Angiotensin-Aldosterone System Blockers

- ACE inhibitors: Patients with LVEF <40%, or hypertension, diabetes or chronic kidney disease unless contraindicated (IA)
- Consider for all other patients (IB)
- Optional for patients with normal LVEF, well controlled risk factors, revascularized (II a)

Angiotensin receptor blockers

- Use in patients who are intolerant of ACE inhibitors and have heart failure or have had myocardial infarction with LVEF $< 40\%$
- Consider in other patients who are ACEi-intolerant
- Consider use in combination with ACEi in systolic-dysfunction heart failure

Aldosterone blockade

- Use in post-myocardial infarction patients, without significant renal dysfunction (creatinine < 2.5 in men, < 2.0 in women) or hyperkalemia who are already receiving therapeutic doses of an ACEi and beta-blocker, have an LVEF <40%, and have either diabetes or heart failure

Beta-Blockers

- Start and continue indefinitely in all patients who have had myocardial infarction, ACS, or left ventricular dysfunction with or without heart failure symptoms unless contraindicated

Influenza vaccination

- Patients with cardiovascular disease should have an influenza vaccination