



Guideline for

Secondary Prevention for Patients with

Coronary and Other Atherosclerotic Vascular Disease

Adopted by Capital Health Plan
Quality Improvement Committee 9/8/09, 5/10/11, 5/14/13, 5/12/2015, 5/9/2017

Secondary Prevention of Cardiovascular Disease

2017 Summary

Patients with established cardiovascular disease (CVD) have a high risk of subsequent cardiovascular events, including myocardial infarction (MI), stroke, and death. Therapeutic lifestyle changes in the form of increased physical activity, dietary modification/weight loss, and smoking cessation are a proven benefit and may improve outcomes in a matter of months. Drug therapies of proven benefit include aspirin, statins, and in patients with MI or heart failure, beta blockers, and ACE-I or ARBs. These therapies work, in part, by ameliorating the risk attributable to the major modifiable risk factors of hypertension, dyslipidemia, diabetes, and smoking. TLCs and adjunctive drug therapies are likely to have the added benefit of primary prevention of CVD.

I. Patients Who Should Receive Secondary Prevention Interventions

- A. All patients with established clinical atherosclerotic CVD (includes those with prior MI and noncoronary atherosclerotic arterial disease such as carotid artery and peripheral artery disease and history of abdominal aneurysm);
- B. Patients with high risk due to the presence of multiple risk factors that confer a 10-year risk of CVD ≥ 7.5 percent;
- C. Most patients with diabetes;
- D. Chronic kidney disease (CKD), especially with estimated glomerular filtration rate (eGFR) < 45 mL/min per 1.73m^2 ;
- E. Older adults: The ACC and AHA recommend that all adults with a wide range of prior occlusive CVD events prescribed evidence-based doses of a high-potency statin up to age 85. However, the treatment decision should be individualized and include consideration of patients' personal preferences for quality of life vs. quantity of life. In addition, potential benefit must be balanced with the potential for drug-drug interactions and the higher rate of chronic kidney disease in these individuals which increases the risk of adverse reactions.

II. Secondary Prevention Interventions

A. Lifestyle Modifications

Modification	Recommendation
Weight Reduction	Achieve/maintain normal body weight (<i>Target BMI, 18.5 to 24.9 kg/m²</i>). Patients above this threshold with a waist circumference of ≥ 35 inches in women or ≥ 40 inches in men should undergo evaluation for the metabolic syndrome and be provided with strategies for implementation of weight reduction measures
Mediterranean Diet	Consume a diet rich in fruits, vegetables, whole grains, poultry, fish, legumes, nuts, and non-tropical vegetable oils with a reduced content of saturated fat, trans fat, sweets, sugar sweetened beverages, and red meats
Dietary Sodium Reduction	Reduce dietary sodium intake to no more than 2400 mg per day in patients who would benefit from lowered blood pressure
Physical Activity	After a risk assessment, engage in regular moderate-intensity aerobic physical activity at least 2.5 hours per week or 1.25 hours per week of vigorous-intensity aerobic physical activity. Activity should be performed in episodes of at least 10 minutes each and spread throughout the week
Moderation of Alcohol Consumption	Adults should limit consumption to no more than 1-2 drinks per day.. Small to moderate consumption of alcohol may lower CVD risk.
Smoking Cessation	Complete smoking cessation and avoidance of environmental tobacco smoke Florida Quit Line (877) 822-6669 Other options are available online at www.capitalhealth.com

BMI: body mass index; BP: blood pressure

B. Medications for Risk Factor Modification

1. Dyslipidemia

All patients with atherosclerotic CVD, as well as those with a 10-year risk $> 7.5\%$, should be prescribed an evidence-based dose of a high-intensity statin, regardless of the baseline LDL-C.

Statins lower the risk of death by 15-20 percent and lower the risk of non-fatal cardiovascular events to an even greater degree. The primary goal for patients at high risk of CVD events is to achieve the largest LDL-C reduction possible with statin therapy. Generally, this is accomplished with intensive rather than moderate dose therapy.

High Dose Statins	
Atorvastatin	40-80 mg / day
Rosuvastatin	20-40 mg / day

Moderate Dose Statins	
Atorvastatin	10-20 mg / day
Rosuvastatin	5-10 mg / day
Pravastatin	40-80 mg / day
Simvastatin	20-40 mg / day

If patients do not meet their LDL-C goal with statin therapy, other agents may be added.

2. Hypertension

The 8th (eighth) Joint National Committee recommends blood pressure treatment goals as follows:

18 – 59 years	≤ 140/90
60 years ±	≤ 150/90
CKD – 60 years + over	– Treat BP < 140/90
Diabetes – 60 years + over	– Treat BP < 140/90



Summary of the American College of Physicians and American Academy of Family Physicians Joint Guideline on Pharmacologic Treatment of Hypertension in Adults Aged 60 Years or Older to Higher Versus Lower Blood Pressure Targets

Disease/Condition	Hypertension
Target Audience	All clinicians
Target Patient Population	Adults aged ≥60 y with hypertension
Treatments Evaluated	Treatment to higher (<150 mm Hg) vs. lower (≤140 mm Hg) SBP targets
Outcomes Evaluated	All-cause mortality, morbidity and mortality related to stroke, cardiac events, and harms
Benefits	Mortality, incidence of stroke, and cardiac events were all reduced with treatment. Treating to a lower BP target did not further reduce mortality, quality of life, or functional status, but it did reduce the incidence of stroke and cardiac events.
Harms	Increased withdrawals due to adverse events with higher vs. lower BP targets Increased cough, hypotension, and risk for syncope with treating to lower vs. higher BP targets No difference between higher and lower BP targets for renal outcomes, cognitive outcomes, or falls and fractures
Adverse Effects	Some of the adverse effects associated with antihypertensive medications include (but are not limited to) the following: Thiazide-type diuretics: electrolyte disturbances, gastrointestinal discomfort, rashes and other allergic reactions, sexual dysfunction in men, photosensitivity reactions, and orthostatic hypotension ACEIs: cough and hyperkalemia ARBs: dizziness, cough, and hyperkalemia Calcium-channel blockers: dizziness, headache, edema, and constipation β-blockers: fatigue and sexual dysfunction
Recommendations	<i>Recommendation 1: ACP and AAFP recommend that clinicians initiate treatment in adults aged 60 years or older with systolic blood pressure persistently at or above 150 mm Hg to achieve a target systolic blood pressure of less than 150 mm Hg to reduce the risk for mortality, stroke, and cardiac events. (Grade: strong recommendation, high-quality evidence). ACP and AAFP recommend that clinicians select the treatment goals for adults aged 60 years or older based on a periodic discussion of the benefits and harms of specific blood pressure targets with the patient.</i> <i>Recommendation 2: ACP and AAFP recommend that clinicians consider initiating or intensifying pharmacologic treatment in adults aged 60 years or older with a history of stroke or transient ischemic attack to achieve a target systolic blood pressure of less than 140 mm Hg to reduce the risk for recurrent stroke. (Grade: weak recommendation, moderate-quality evidence). ACP and AAFP recommend that clinicians select the treatment goals for adults aged 60 years or older based on a periodic discussion of the benefits and harms of specific blood pressure targets with the patient.</i> <i>Recommendation 3: ACP and AAFP recommend that clinicians consider initiating or intensifying pharmacologic treatment in some adults aged 60 years or older at high cardiovascular risk, based on individualized assessment, to achieve a target systolic blood pressure of less than 140 mm Hg to reduce the risk for stroke or cardiac events. (Grade: weak recommendation, low-quality evidence). ACP and AAFP recommend that clinicians select the treatment goals for adults aged 60 years or older based on a periodic discussion of the benefits and harms of specific blood pressure targets with the patient.</i>
Clinical Considerations	Accurate measurement of BP is important before initiating treatment for hypertension. Some patients may have elevated BP in clinical settings, and ambulatory measurement may be appropriate. Clinicians should consider treatment with nonpharmacologic options, including weight loss, dietary changes, and an increase in physical activity, initially or concurrently with pharmacologic treatment. Many older adults may be taking various medications. Clinicians should consider treatment burden and drug interactions when deciding on treatment options. When selecting pharmacologic therapy, clinicians should prescribe generic drugs where available. Evidence for adults who are frail or those with multimorbidity is limited.

See attached guidelines for dosing antihypertensive drugs.

Table 4. Evidence-Based Dosing for Antihypertensive Drugs

Antihypertensive Medication	Initial Daily Dose, mg	Target Dose in RCTs Reviewed, mg	No. of Doses per Day
ACE inhibitors			
Captopril	50	150-200	2
Enalapril	5	20	1-2
Lisinopril	10	40	1
Angiotensin receptor blockers			
Eprosartan	400	600-800	1-2
Candesartan	4	12-32	1
Losartan	50	100	1-2
Valsartan	40-80	160-320	1
Irbesartan	75	300	1
β-Blockers			
Atenolol	25-50	100	1
Metoprolol	50	100-200	1-2
Calcium channel blockers			
Amlodipine	2.5	10	1
Diltiazem extended release	120-180	360	1
Nitrendipine	10	20	1-2
Thiazide-type diuretics			
Bendroflumethiazide	5	10	1
Chlorthalidone	12.5	12.5-25	1
Hydrochlorothiazide	12.5-25	25-100 ^a	1-2
Indapamide	1.25	1.25-2.5	1

Abbreviations: ACE, angiotensin-converting enzyme; RCT, randomized controlled trial.
^aCurrent recommended evidence-based dose that balances efficacy and safety is 25-50 mg daily.

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Table 6. Guideline Comparisons of Goal BP and Initial Drug Therapy for Adults With Hypertension

Guideline	Population	Goal BP, mm Hg	Initial Drug Treatment Options
2014 Hypertension guideline	General ≥60 y	<150/90	Nonblack: thiazide-type diuretic, ACEI, ARB, or CCB; black: thiazide-type diuretic or CCB
	General <60 y	<140/90	
	Diabetes	<140/90	
	CKD	<140/90	
ESH/ESC 2013 ³⁷	General nonelderly	<140/90	Diuretic, β-blocker, CCB, ACEI, or ARB
	General elderly <80 y	<150/90	
	General ≥80 y	<150/90	
	Diabetes	<140/85	
	CKD no proteinuria	<140/90	
	CKD + proteinuria	<130/90	
CHEP 2013 ³⁸	General <80 y	<140/90	Thiazide, β-blocker (age <60y), ACEI (nonblack), or ARB
	General ≥80 y	<150/90	
	Diabetes	<130/80	
	CKD	<140/90	
ADA 2013 ³⁹	Diabetes	<140/80	ACEI or ARB
KDIGO 2012 ⁴⁰	CKD no proteinuria	≤140/90	ACEI or ARB
	CKD + proteinuria	≤130/80	
NICE 2011 ⁴¹	General <80 y	<140/90	<55 y: ACEI or ARB
	General ≥80 y	<150/90	≥55 y or black: CCB
ISHIB 2010 ⁴²	Black, lower risk	<135/85	Diuretic or CCB
	Target organ damage or CVD risk	<130/80	

Abbreviations: ADA, American Diabetes Association; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; CCB, calcium channel blocker; CHEP, Canadian Hypertension Education Program; CKD, chronic kidney disease; CVD, cardiovascular disease; DHPCCB, dihydropyridine calcium channel blocker; ESC, European Society of Cardiology; ESH, European Society of Hypertension; ISHIB, International Society for Hypertension in Blacks; JNC, Joint National Committee; KDIGO, Kidney Disease: Improving Global Outcome; NICE, National Institute for Health and Clinical Excellence.

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C. Other Adjunctive Therapies

1. *Antiplatelet Therapy*- Long-term aspirin therapy significantly reduces the risk of subsequent occlusive vascular events. For most patients with CVD including those with PAD, anticoagulant therapy is not recommended if the patient is taking the recommended antiplatelet therapy.
2. *Beta Blockers*- Should be used as routine therapy in patients with acute MI or in those with heart failure due to systolic dysfunction.
3. *ACE/ARB*- Decrease cardiovascular mortality in post MI patients with systolic dysfunction. Both are renal-protective and slow the progression of proteinuric chronic renal failure which is common in diabetes post MI.
4. *Aldosterone Blockade*- Recommended for post MI patients without significant renal dysfunction or hyperkalemia who are receiving therapeutic doses of ACE Inhibitor and beta blocker and who have left ventricular EF $\leq 40\%$ and who have either diabetes or heart failure.
5. *Flu Vaccine*- Individuals with established CVD and high risk primary prevention may have increased risks for complication of influenza infection. Recommend an annual flu vaccination to all patients.

Patient Education: Patient education regarding risk factors and their management is central to secondary prevention. Education should be individualized to optimize care and promote wellness. Education that respects the individual's level of understanding should focus on medication management and cardiovascular risk reduction with the inclusion of therapeutic options, appropriate exercise, self-monitoring, and how to recognize and take appropriate action on worsening cardiovascular symptoms.

Reference

<http://www.uptodate.com/contents/prevention-of-cardiovascular-disease-events-in-those-with-established-disease-or-at-high-risk>

Last updated Feb 01, 2017