

# 2006 Recommendations of the Canadian Hypertension Education Program: Sound Bite Version

*Canadian Hypertension Education Program*

Programme  
Éducatif  
Canadien sur  
l'Hypertension



Canadian  
Hypertension  
Education  
Program

## INTRODUCTION

Hypertension remains a significant health problem that is projected to become a greater global burden in the next 20 years. The estimated total number of adults with hypertension was 972 million in 2000: 333 million in economically developed countries and 639 million in less economically developed countries. The number of adults with hypertension is anticipated to increase by about 60% by 2025, to a total of 1.56 billion. Hence, hypertension is an important and growing public health challenge worldwide. Prevention, detection, treatment, and control of this condition should receive high priority. The Canadian Hypertension Education Program (CHEP) has a mandate to improve the management of hypertension, to develop tools to aid health care professionals, and to evaluate the impact of these activities. CHEP continues to provide the most current evidence-based recommendations to Canadian health care workers.

This year, 2006, marks the seventh consecutive year that CHEP has updated recommendations for the diagnosis, management, and treatment of hypertension. This year, CHEP's recommendations focus on adherence to antihypertensive therapy.

## NEW KEY MESSAGE OF THE 2006 RECOMMENDATIONS: IMPROVE PATIENT ADHERENCE TO ANTIHYPERTENSIVE THERAPIES

Adherence with antihypertensive management can be improved by implementing a multipronged approach incorporating the following strategies.

### Assist Patients to Adhere

- Teach patients to take their pills on a regular schedule associated with a routine daily activity (e.g., brushing teeth).

- Simplify regimens with long-acting once-daily medications.
- Use fixed-dose combination medications.
- Use unit-of-use packaging (e.g., blister packaging).

### Assist Patients to Get More Involved in Their Treatment

- Encourage greater patient responsibility and autonomy in regular monitoring of their blood pressure.
- Educate patients and patients' families about their disease and treatment regimens verbally and in writing.

### Improve Your Management in the Office and Beyond

- Assess adherence to nonpharmacological and pharmacological therapy at every visit.
- Encourage adherence to therapy by telephone contact and support provided by health care practitioners, particularly over the first 3 months of therapy.
- Coordinate with work-site health care givers, if available, to improve monitoring of hypertension management.

## OLD BUT STILL VERY IMPORTANT MESSAGES OF CHEP

### Measure Blood Pressure in All Adults at All Appropriate Visits

For many Canadians with hypertension, the condition remains undetected; therefore, measure blood pressure in all adults at all appropriate visits.

### Expedite the Diagnosis of Hypertension

For patients with hypertensive urgencies or emergencies, hypertension can be diagnosed at an initial hypertension-related visit. For patients with blood pressure of 140/90 mm Hg or above and with 1 of 4



other indicators—target organ damage, chronic kidney disease, diabetes mellitus, or blood pressure of 180/110 mm Hg or above—the diagnosis can be made at the second visit. For patients with blood pressure of 160–179/100–109 mm Hg and with no diagnosis of hypertension according to the criteria above, the diagnosis can be made at the third visit. The diagnosis of hypertension can also be made if self-measured blood pressure (average  $\geq$  135/85 mm Hg, based on duplicate readings taken twice a day for 1 week, ignoring the first day) or ambulatory blood pressure (daytime ambulatory blood pressure  $\geq$  135/85 mm Hg or 24-h blood pressure  $\geq$  130/80 mm Hg) is elevated after the second office visit.

### **Assess and Manage Global Cardiovascular Risk**

Most hypertensive patients have multiple cardiovascular risks, in addition to hypertension, that require assessment and management. Acetylsalicylic acid should be considered for patients with controlled hypertension. Statins are recommended for hypertensive patients with established cardiovascular disease or at least 3 other cardiovascular risks.

### **Emphasize that Lifestyle Modifications Form the Cornerstone of Antihypertensive Therapy**

Lifestyle modifications should be encouraged, as they are safe and inexpensive, they can lower blood pressure and prevent hypertension, and (when combined with drug therapy) they may result in better blood pressure control and improved quality of life. Many of the individual lifestyle modifications listed below, if successfully adopted, may lead to blood pressure changes of a magnitude comparable to that achieved by single-drug therapy. Although each lifestyle factor typically has a modest effect, the combined effects may be substantial. From a public health perspective, even a small reduction in blood pressure translates into a significant, beneficial effect on the occurrence of hypertension and its complications.

The following lifestyle changes are recommended by CHEP to reduce blood pressure:

- diet low in salt and saturated fats and high in fresh fruit and vegetables and low-fat dairy products (the DASH diet)
- 30 to 60 min of continuous or accumulated moderate-intensity dynamic exercise (walking, jogging, cycling, or swimming) on 4 to 7 days each week
- weight reduction for those who are overweight
- reduction of alcohol consumption for those who drink more than 2 drinks/day.
- smoking cessation to reduce global cardiovascular risk

### **Treat to Target**

The following targets are currently recommended for reducing blood pressure:

- in general, less than 140 mm Hg systolic and less than 90 mm Hg diastolic
- for patients with diabetes or chronic kidney disease, less than 130/80 mm Hg

### **Use Combinations of Medications and Lifestyle Modifications to Achieve Blood Pressure Targets**

Most patients require 2 or more drugs to achieve recommended blood pressure targets. Individualization of antihypertensive therapy should always be considered (Table 1). In general, the average reduction in blood pressure with a single blood-pressure-lowering medication is 10/5 mm Hg. Combining medications is therefore to be expected in therapy for hypertension. Using lifestyle modifications can reduce the number and doses of medications required for blood pressure control and should be recommended for all hypertensive patients. The systolic blood pressure target is usually more difficult to achieve; however, the patient's cardiovascular prognosis is at least as closely associated (if not more closely associated) with systolic blood pressure as with diastolic blood pressure.

## **NEW RECOMMENDATIONS FOR 2006**

### **Treatment of Patients with Hypertension**

- $\beta$ -Blocker therapy remains strongly recommended for hypertensive patients of all ages who have specific indications, such as prior myocardial infarction, angina, or congestive heart failure. New evidence supports the use of  $\beta$ -blockers as first-line therapy in uncomplicated hypertension only for patients younger than 60 years of age.
- Angiotensin II receptor blockers (ARBs) are recommended after myocardial infarction for patients in whom angiotensin-converting enzyme (ACE) inhibitors are not well tolerated.
- Patients with hypertension who are taking ACE inhibitors and ARBs must undergo monitoring for hypotension, hyperkalemia, and worsening renal failure.
- For patients with diabetes, normal urinary albumin excretion, and hypertension, any of an ACE inhibitor, ARB, dihydropyridine calcium channel blocker, or thiazide diuretic is recommended, with special consideration to the ACE inhibitors and ARBs (given their potential renal benefits).

### **Diagnosis of Hypertension**

It is becoming increasingly evident that blood pressure measured in the office may overestimate or underestimate risk. Accordingly, emphasis is now being placed on home or self-administered blood pressure readings. In the 2006 recommendations, CHEP identified that treated hypertensive patients with masked hypertension (blood pressure controlled in the office



**Table 1. Considerations in the Individualization of Antihypertensive Therapy**

Condition	Initial Therapy	Second-Line Therapy	Notes and Cautions
Hypertension without compelling indications for other medications	Thiazide diuretics, $\beta$ -blockers (for patients under 60 years of age), ACE inhibitors (for nonblack patients), ARBs, or long-acting CCBs (consider ASA and/or statins in selected patients)	Combinations of first-line drugs	$\alpha$ -Blockers are not recommended as initial monotherapy. $\beta$ -Blockers are not recommended as initial monotherapy in those 60 years of age or older. Hypokalemia should be avoided in those who are receiving diuretics. ACE inhibitors are not recommended as initial monotherapy for black patients. ACE inhibitors and ARBs are contraindicated in pregnancy.
Isolated systolic hypertension without other compelling indications	Thiazide diuretics, ARBs, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	Hypokalemia should be avoided by using potassium-sparing agents in those who are receiving diuretics.
Diabetes mellitus with nephropathy	ACE inhibitors or ARBs	Addition of one or more of thiazide diuretics, cardioselective $\beta$ -blockers, or long-acting CCBs, or a combination of ARB and ACE inhibitor	
Diabetes mellitus without nephropathy	ACE inhibitors, ARBs, thiazide diuretics, or dihydropyridine CCBs	Combination of first-line drugs or addition of cardioselective $\beta$ -blockers	
Angina	$\beta$ -Blockers (strongly consider adding ACE inhibitors)	Long-acting CCBs	Avoid short-acting nifedipine.
Prior myocardial infarction	$\beta$ -Blockers and ACE inhibitors (ARBs for patients with intolerance to ACE inhibitors)		
Heart failure	ACE inhibitors (ARBs for patients with intolerance to ACE inhibitors), $\beta$ -blockers, and spironolactone in selected patients	ARBs or hydralazine/isosorbide dinitrate (thiazide or loop diuretics as additive therapy)	Avoid non-dihydropyridine CCBs.
Past cerebrovascular accident or TIA	Combinations of ACE inhibitor and diuretic		Caution is indicated in deciding whether to lower blood pressure in patients with acute stroke. Pharmacological agents and routes of administration should be chosen to avoid precipitous drops in blood pressure.
Chronic kidney disease	ACE inhibitors (diuretics as additive therapy)	Combinations of additional agents (ARBs for patients with intolerance to ACE inhibitors)	Avoid ACE inhibitors and ARBs if bilateral renal artery stenosis is present
Left ventricular hypertrophy	ACE inhibitors, ARBs, CCBs, thiazide diuretics, or $\beta$ -blockers for patients under 60 years of age		Avoid hydralazine and minoxidil.
Peripheral arterial disease	Does not affect treatment recommendations		Avoid $\beta$ -blockers with severe disease.
Dyslipidemia	Does not affect treatment recommendations		

ACE = angiotensin-converting enzyme, ARB = angiotensin II receptor blocker, ASA = acetylsalicylic acid, CCB = calcium-channel blocker, TIA = transient ischemic accident.



but not at home) should monitor home/self blood pressure regularly because the cardiovascular prognosis for patients with confirmed masked hypertension is similar to that of patients with uncontrolled hypertension.

### **DELETED 2005 RECOMMENDATION**

For patients with proteinuria greater than 1 g/day, the recommendation for a target blood pressure of 125/75 mm Hg has been deleted in 2006. This revision is based on new evidence demonstrating that in patients with proteinuria greater than 1 g/day, a target blood pressure of less than 125/75 mm Hg was not superior to a target of less than 130/80 mm Hg.

### **CONCLUSIONS**

As in previous years, it needs to be reiterated that the CHEP hypertension management recommendations are based solely on efficacy data. Considerations relating to individual patient or physician preferences and the cost-effectiveness of different drug classes have not

been a component of this process and need to be considered by the physician and patient when individualizing therapy.

The full recommendations, implementation tools, patient information, and useful links can be found at <http://www.hypertension.ca>

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