



## Canadian Hypertension Education Program

### *Brief overview of 2004 recommendations*

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Responding to the challenge of controlling hypertension and hypertension-related cardiovascular disease, the Canadian Hypertension Education Program has produced annually updated evidence-based hypertension management recommendations. The program has also provided tools to assist health care professionals in adopting and implementing these recommendations. This is a brief overview of the 2004 hypertension management recommendations. Full text of the recommendations, summaries, and slides is available on the Canadian Hypertension Society website ([www.hypertension.ca](http://www.hypertension.ca)).

### What's new for 2004?

More than 90% of Canadians who are aware of having hypertension also have other cardiovascular risk factors. A holistic approach to care of these patients is appropriate. While lowering blood pressure by 10 mm Hg systolic and 5 mm Hg diastolic reduces the relative risk of major cardiovascular complications by 21% to 30%, a comprehensive pharmacologic approach is estimated to reduce risk by up to 80%. In 2004, new messages about comprehensive drug therapy for hypertension patients include emphasizing global vascular protection and increasing recognition of the need for lifestyle modification.

#### *Emphasizing global vascular protection.*

Physicians should:

- prescribe acetylsalicylic acid to hypertensive patients older than 50 years once blood pressure is controlled;
- prescribe angiotensin-converting enzyme (ACE) inhibitors for patients with established atherosclerotic disease; and

- prescribe statins to hypertensive patients with three or more cardiovascular risk factors (male, older than 55, diabetes, smoking, total cholesterol-to-high-density lipoprotein ratio  $\geq 6$ , microalbuminuria or proteinuria, left ventricular hypertrophy, peripheral vascular disease, past cerebrovascular or coronary artery event, family history of premature cardiovascular disease).

#### *Increasing recognition of the need for lifestyle modification.*

Given a greater than 90% probability that people will develop hypertension during their lifetimes and given evidence that single interventions to modify lifestyle can be as effective as full-dose antihypertensive medication (Table 1), lifestyle modifications are critical for both normotensive and hypertensive adult Canadians. Various lifestyle interventions can be combined to further reduce blood pressure.

- Prescribe moderate dynamic physical activity (30 to 45 minutes three to five times weekly).
- Prescribe weight loss for those who are overweight.
- Prescribe reduction in alcohol consumption to less than two drinks daily and no more than 14 drinks weekly for men or no more than nine

**Table 1. Effect of lifestyle changes on hypertensive adults' blood pressure**

INTERVENTION	TARGETED CHANGE	CHANGE IN BLOOD PRESSURE (SYSTOLIC/DIASTOLIC) MM HG
Sodium reduction	100 mmol/d	-5.8/-2.5
Weight loss	4.5 kg	-7.2/-5.9
Alcohol reduction	2.7 drinks/d	-4.6/-2.3
Exercise	3 times/wk	-10.3/-7.5
Dietary recommendations	DASH diet	-11.4/-5.5

**Table 2. Abridged recommendations for antihypertensive therapy:** Individualized recommendations for specific types of patients can be found in full recommendations, summaries, and slides at [www.chs.md](http://www.chs.md). Short-acting calcium channel blockers are not recommended for treatment of hypertension. Nephropathy is considered to be microalbuminuria, greater elevation in proteinuria, or impaired glomerular filtration rate.

CONDITION	INITIAL THERAPY	ADDITIONAL THERAPY	COMMENTS
Uncomplicated hypertension	Thiazidelike diuretics, $\beta$ -blockers, ACE inhibitors, ARBs, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	$\alpha$ -Blockers are not recommended as initial therapy. $\beta$ -Blockers are not recommended as initial therapy for patients older than 60 years. Avoid hypokalemia by using potassium-sparing diuretics. ACE inhibitors are not recommended for black patients
Isolated systolic hypertension	Thiazidelike diuretics, ARBs, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	Avoid hypokalemia by using potassium-sparing diuretics
Diabetes mellitus	Thiazidelike diuretics, ACE inhibitors, or ARBs	Add one or more of: cardioselective $\beta$ -blockers, long-acting CCBs, or an ARB-ACE inhibitor combination	If serum creatinine level is $>150$ mol/L and if volume control is required, a loop diuretic should replace low-dose thiazidelike diuretics. With nephropathy, thiazidelike diuretics are a second-line recommendation

ACE—angiotensin-converting enzyme, ARB—angiotensin II receptor blocker, CCBs—calcium channel blockers.

drinks weekly for women among those who drink heavily.

- Prescribe the DASH diet (high in fresh fruits and vegetables, nuts, legumes, and low-fat dairy products, but low in saturated fat; for more information see [www.nhlbi.nih.gov/health/public/heart/hbp/dash](http://www.nhlbi.nih.gov/health/public/heart/hbp/dash)).
- Prescribe lower salt consumption in hypertensive and salt-sensitive normotensive patients (ie, those older than 45 years, Canadians of African descent, and those with impaired renal function or diabetes).

### What's old but still important in 2004

- Assess all adult patients' blood pressure at every appropriate opportunity.
- Repeat measurements over three to five visits (or self-monitoring or automatic ambulatory blood pressure monitoring) unless there is severe hypertension, a hypertensive emergency, or urgency to diagnose hypertension.
- Do routine laboratory tests as part of a hypertensive workup (blood for electrolytes, creatinine, fasting glucose, complete blood count, and lipid profile [total cholesterol, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, and triglycerides], urinalysis, and electrocardiography).
- Prescribe antihypertensive drugs proven to reduce cardiovascular complications (Table 2).

- Treat to blood pressure target (Table 3). Pay particular attention to systolic targets.
- Combine antihypertensive drugs to achieve blood pressure targets.
- Promote patient adherence with simple approaches that can detect, prevent, and improve compliance (Table 4).

**Table 3. Blood pressure treatment targets**

SITUATION	BLOOD PRESSURE TARGET (MM HG)
Without a compelling indication for more intense treatment	Systolic $<140$ , diastolic $<90$
Isolated systolic hypertension	Systolic $<140$
Renal disease	Systolic $<130$ , diastolic $<80$
Renal disease with $>1$ g/24 h proteinuria	Systolic $<125$ , diastolic $<75$
Diabetes	Systolic $<130$ , diastolic $<80$

**Table 4. Recommendations to improve adherence to antihypertensive prescriptions:** Adherence can be improved by a multi-pronged approach

- Educate patients and their families to observe their disease treatment regimens
- Engage the family in lifestyle changes
- Simplify medication regimens to once-daily dosing
- Tailor pill-taking to fit patients' daily habits
- Encourage greater responsibility and autonomy among patients in monitoring blood pressure and adjusting drug dosages