

## Guidelines

# The 2014 Canadian Hypertension Education Program Recommendations for Blood Pressure Measurement, Diagnosis, Assessment of Risk, Prevention, and Treatment of Hypertension

Kaberi Dasgupta, MD, MSc,<sup>a</sup> Robert R. Quinn, MD, PhD,<sup>b</sup> Kelly B. Zarnke, MD, MSc,<sup>c</sup> Doreen M. Rabi, MD, MSc,<sup>d</sup> Pietro Ravani, MD, PhD,<sup>b</sup> Stella S. Daskalopoulou, MD, PhD,<sup>a</sup> Simon W. Rabkin, MD,<sup>e</sup> Luc Trudeau, MD,<sup>f</sup> Ross D. Feldman, MD,<sup>g</sup> Lyne Cloutier, RN, PhD,<sup>h</sup> Ally Prebtani, MD,<sup>i</sup> Robert J. Herman, MD,<sup>j</sup> Simon L. Bacon, PhD,<sup>k</sup> Richard E. Gilbert, MD, PhD,<sup>l</sup> Marcel Ruzicka, MD, PhD,<sup>m</sup> Donald W. McKay, PhD,<sup>n</sup> Tavis S. Campbell, PhD,<sup>o</sup> Steven Grover, MD, MPA,<sup>p</sup> George Honos, MD,<sup>q</sup> Ernesto L. Schiffrin, MD, PhD,<sup>r</sup> Peter Bolli, MD,<sup>s</sup> Thomas W. Wilson, MD,<sup>t</sup> Patrice Lindsay, RN, PhD,<sup>u</sup> Michael D. Hill, MD, MSc,<sup>v</sup> Shelagh B. Coutts, MD,<sup>w</sup> Gord Gubitz, MD,<sup>x</sup> Mark Gelfer, MD,<sup>y</sup> Michel Vallée, MD, PhD,<sup>z</sup> G.V. Ramesh Prasad, MBBS, MSc,<sup>aa</sup> Marcel Lebel, MD,<sup>bb</sup> Donna McLean, RN, NP, PhD,<sup>cc</sup> J. Malcolm O. Arnold, MD,<sup>dd</sup> Gordon W. Moe, MD, MSc,<sup>ee</sup> Jonathan G. Howlett, MD,<sup>ff</sup> Jean-Martin Boulanger, MD,<sup>gg</sup> Pierre Larochelle, MD,<sup>hh</sup> Lawrence A. Leiter, MD,<sup>ii</sup> Charlotte Jones, MD, PhD,<sup>jj</sup> Richard I. Ogilvie, MD,<sup>kk</sup> Vincent Woo, MD,<sup>ll</sup> Janusz Kaczorowski, PhD,<sup>mm</sup> Kevin D. Burns, MD,<sup>nn</sup> Robert J. Petrella, MD, PhD,<sup>oo</sup> Swapnil Hiremath, MD, MPH,<sup>pp</sup> Alain Milot, MD, MSc,<sup>qq</sup> James A. Stone, MD, PhD,<sup>rr</sup> Denis Drouin, MD,<sup>ss</sup> Kim L. Lavoie, PhD,<sup>tt</sup> Maxime Lamarre-Cliche, MD,<sup>uu</sup> Guy Tremblay, MD,<sup>vv</sup> Pavel Hamet, MD, PhD,<sup>ww</sup> George Fodor, MD, PhD,<sup>xx</sup> S. George Carruthers, MD,<sup>yy</sup> George B. Pylypchuk, MD,<sup>zz</sup> Ellen Burgess, MD,<sup>aaa</sup> Richard Lewanczuk, MD, PhD,<sup>bbb</sup> George K. Dresser, MD, PhD,<sup>ccc</sup> S. Brian Penner, MD,<sup>ddd</sup> Robert A. Hegele, MD,<sup>eee</sup> Philip A. McFarlane, MD, PhD,<sup>fff</sup> Milan Khara, MBChB,<sup>ggg</sup> Andrew Pipe, CM, MD,<sup>hhh</sup> Paul Oh, MD, MSc,<sup>iii</sup> Peter Selby, MBBS, MHSc,<sup>jjj</sup> Mukul Sharma, MD, MSc,<sup>kkk</sup> Debra J. Reid, PhD, RD,<sup>lll</sup>

Received for publication January 23, 2014. Accepted February 3, 2014.

Corresponding author: Dr Kaberi Dasgupta, Division of Clinical Epidemiology, Department of Medicine, McGill University Health Centre, 687 Pine Ave West, V-Building (V1.08), Montreal, Québec H3A 1A1, Canada. Tel.: +1-514-934-1934 x44715; fax: +1-514-934-8293.

E-mail: [kaberi.dasgupta@mcgill.ca](mailto:kaberi.dasgupta@mcgill.ca)

See page 500 for disclosure information.

A version of the hypertension recommendations designed for patient and public education has been developed to assist health care practitioners managing hypertension. The summary is available electronically (go to <http://www.hypertension.ca> or <http://www.heartandstroke.ca>).

Sheldon W. Tobe, MD, MSc(HPTE),<sup>mmmm</sup> Raj S. Padwal, MD, MSc,<sup>nnnn</sup> and  
Luc Poirier, BPharm, MSc;<sup>ooo</sup> for the Canadian Hypertension Education Program

<sup>a</sup> Divisions of General Internal Medicine, Clinical Epidemiology and Endocrinology, Department of Medicine, McGill University, McGill University Health Centre, Montreal, Québec, Canada; <sup>b</sup> Division of Nephrology, Department of Medicine, and Department of Community Health Sciences, Foothills Medical Centre, University of Calgary, Calgary, Alberta, Canada; <sup>c</sup> Division of General Internal Medicine, University of Calgary, Calgary, Alberta, Canada; <sup>d</sup> Departments of Medicine, Community Health, and Cardiac Sciences, University of Calgary, Calgary, Alberta, Canada; <sup>e</sup> Vancouver Hospital, University of British Columbia, Vancouver, British Columbia, Canada; <sup>f</sup> Division of Internal Medicine, McGill University, Montréal, Québec, Canada; <sup>g</sup> Western University, London, Ontario, Canada; <sup>h</sup> Université du Québec à Trois-Rivières, Trois-Rivières, Québec, Canada; <sup>i</sup> McMaster University, Hamilton, Ontario, Canada; <sup>j</sup> University of Calgary, Calgary, Alberta, Canada; <sup>k</sup> Montreal Behavioural Medicine Centre, Concordia University and Hôpital du Sacré-Coeur de Montréal, Montréal, Québec, Canada; <sup>l</sup> University of Toronto, Division of Endocrinology, St Michael's Hospital, Toronto, Ontario, Canada; <sup>m</sup> Division of Nephrology, Department of Medicine, Ottawa Hospital Research Institute, University of Ottawa, Ottawa, Ontario, Canada; <sup>n</sup> Faculty of Medicine, Memorial University of Newfoundland and Labrador, St John's, Newfoundland and Labrador, Canada; <sup>o</sup> Department of Psychology, University of Calgary, Calgary, Alberta, Canada; <sup>p</sup> Division of Clinical Epidemiology, Montreal General Hospital, Montreal, Québec, Canada; <sup>q</sup> University of Montreal, Montreal, Québec, Canada; <sup>r</sup> Department of Medicine and Lady Davis Institute for Medical Research, Jewish General Hospital, McGill University, Montreal, Québec, Canada; <sup>s</sup> Ambulatory Internal Medicine Teaching Clinic, St Catharines, Ontario, Canada; <sup>t</sup> Department of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; <sup>u</sup> Best Practices and Performance, Heart and Stroke Foundation, Toronto, Ontario, Canada; <sup>v</sup> Department of Clinical Neurosciences, Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; <sup>w</sup> Departments of Clinical Neurosciences and Radiology, Hotchkiss Brain Institute, University of Calgary, Calgary, Alberta, Canada; <sup>x</sup> Division of Neurology, Halifax Infirmary, Dalhousie University, Halifax, Nova Scotia, Canada; <sup>y</sup> Department of Family Medicine, University of British Columbia, Copeman Healthcare Centre, Vancouver, British Columbia, Canada; <sup>z</sup> Hôpital Maisonneuve-Rosemont, Université de Montréal, Montréal, Québec, Canada; <sup>aaa</sup> University of Toronto, Toronto, Ontario, Canada; <sup>bbb</sup> Department of Medicine, l'Université Laval, Québec, Québec, Canada; <sup>ccc</sup> University of Alberta, Edmonton, Alberta, Canada; <sup>ddd</sup> Western University, London, Ontario, Canada; <sup>eee</sup> St Michael's Hospital, University of Toronto, Toronto, Ontario, Canada; <sup>fff</sup> Department of Medicine, University of Calgary, Calgary, Ontario, Canada; <sup>ggg</sup> Charles LeMoine Hospital Research Centre, Sherbrooke University, Sherbrooke, Québec, Canada; <sup>hhh</sup> Institut de recherches cliniques de Montréal, Université de Montréal, Montréal, Québec, Canada; <sup>iii</sup> Keenan Research Centre in the Li Ka Shing Knowledge Institute of St Michael's Hospital, and University of Toronto, Toronto, Ontario, Canada; <sup>jjj</sup> Southern Medical Program, University of British Columbia, Okanagan Campus, Kelowna, British Columbia, Canada; <sup>kkk</sup> University Health Network, Departments of Medicine and Pharmacology, University of Toronto, Toronto, Ontario, Canada; <sup>lll</sup> University of Manitoba, Winnipeg, Manitoba, Canada; <sup>mmm</sup> Université de Montréal and CHUM, Montréal, Québec, Canada; <sup>nnn</sup> Ottawa Hospital Research Institute, Ottawa, Ontario, Canada; <sup>ooo</sup> Department of Family Medicine, Western University, London, Ontario, Canada; <sup>ppp</sup> Division of Nephrology, University of Ottawa, Ottawa, Ontario, Canada; <sup>qqq</sup> Department of Medicine, Université Laval, Québec, Québec, Canada; <sup>rrr</sup> Division of Cardiology, Department of Medicine, University of Calgary, Calgary, Alberta, Canada; <sup>sss</sup> Faculty of Medicine, Université Laval, Québec, Québec, Canada; <sup>ttt</sup> Department of Psychology, University of Québec at Montreal (UQAM), Montréal, Québec, Canada; <sup>uuu</sup> Institut de Recherches Cliniques de Montréal, Université de Montréal, Québec, Canada; <sup>vvv</sup> CHU-Québec-Hôpital St Sacrement, Québec, Québec, Canada; <sup>www</sup> Faculté de Médecine, Université de Montréal and Centre hospitalier de l'Université de Montréal (CHUM), Montréal, Québec, Canada; <sup>xxx</sup> University of Ottawa Heart Institute, Ottawa, Ontario, Canada; <sup>yyy</sup> Lisburn, Northern Ireland, UK; <sup>zzz</sup> Department of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; <sup>aaa</sup> Faculty of Medicine, University of Calgary, Calgary, Alberta, Canada; <sup>bbb</sup> University of Alberta, Edmonton, Alberta, Canada; <sup>ccc</sup> Schulich School of Medicine and Dentistry, Western University, London, Ontario, Canada; <sup>ddd</sup> Department of Internal Medicine, University of Manitoba, Winnipeg, Manitoba, Canada; <sup>eee</sup> Departments of Medicine (Division of Endocrinology) and Biochemistry, Western University, London, Ontario, Canada; <sup>fff</sup> Division of Nephrology, St Michael's Hospital, University of Toronto, Toronto, Ontario, Canada; <sup>ggg</sup> Vancouver Coastal Health Addiction Services, Faculty of Medicine, University of British Columbia, Vancouver, British Columbia, Canada; <sup>hhh</sup> Division of Prevention and Rehabilitation, University of Ottawa Heart Institute and University of Ottawa, Ottawa, Ontario, Canada; <sup>iii</sup> University Health Network, University of Toronto, Toronto, Ontario, Canada; <sup>jjj</sup> Centre for Addiction and Mental Health, University of Toronto, Toronto, Ontario, Canada; <sup>kkk</sup> The Canadian Stroke Network, Ottawa, Ontario, Canada; <sup>lll</sup> Canadian Forces Health Services, Department of National Defence and Dietitians of Canada, Ottawa, Ontario, Canada; <sup>mmm</sup> Northern Ontario School of Medicine, Greater Sudbury, Ontario, and University of Toronto, Toronto, Ontario, Canada; <sup>nnn</sup> Department of Medicine, University of Alberta, Edmonton, Alberta, Canada; <sup>ooo</sup> Centre Hospitalier Universitaire de Québec et Faculté de Pharmacie, Université Laval, Québec, Québec, Canada

## ABSTRACT

Herein, updated evidence-based recommendations for the diagnosis, assessment, prevention, and treatment of hypertension in Canadian adults are detailed. For 2014, 3 existing recommendations were modified and 2 new recommendations were added. The following recommendations were modified: (1) the recommended sodium intake threshold was changed from  $\leq 1500$  mg (3.75 g of salt) to approximately 2000 mg (5 g of salt) per day; (2) a pharmacotherapy treatment initiation systolic blood pressure threshold of  $\geq 160$  mm Hg was added in very elderly (age  $\geq 80$  years) patients who do not have diabetes or target organ damage (systolic blood pressure target in this population remains at  $< 150$  mm Hg); and (3) the target population recommended to receive low-dose acetylsalicylic acid therapy for primary prevention was narrowed from all patients with controlled hypertension to only those  $\geq 50$  years of age. The 2 new

## RÉSUMÉ

Ici nous présentons en détail les mises à jour des recommandations fondées sur des preuves concernant le diagnostic, l'évaluation, la prévention et le traitement de l'hypertension artérielle des adultes canadiens. Pour l'année 2014, 3 recommandations ont été modifiées et 2 nouvelles recommandations ont été ajoutées. Les recommandations suivantes ont été modifiées : 1) les seuils de l'apport recommandé en sodium sont passés de  $\leq 1500$  mg (3,75 g de sel) à approximativement 2000 mg (5 g de sel) par jour; 2) un seuil de  $\geq 160$  mm Hg pour la pression artérielle systolique au début de la pharmacothérapie a été ajouté pour les patients très âgés ( $\geq 80$  ans) n'ayant pas de diabète ou d'atteinte à un organe cible (les valeurs cibles de pression artérielle systolique chez cette population ont été maintenues à  $< 150$  mm Hg); 3) la population cible devant recevoir le traitement d'acide acétylsalicylique à faible dose pour la prévention

## Executive Summary

**Objective:** To provide updated 2014 evidence-based recommendations for the prevention, diagnosis, assessment, and treatment of hypertension in adults.

**Methods:** A medical librarian independently conducted a MEDLINE search current to August 2013. Reference lists were reviewed and experts were contacted to identify additional studies. Content and methodology experts reviewed and

appraised relevant articles using standardized grading algorithms. For pharmacologic interventions, evidence from randomized trials and systematic reviews of trials were preferred and changes in cardiovascular morbidity and mortality, and total mortality, were the primary outcomes of interest. For health behaviour management, blood pressure (BP)-lowering was accepted as a primary outcome. In patients with chronic kidney disease (CKD), progressive renal impairment was

Download English Version:

<https://daneshyari.com/en/article/5877160>

Download Persian Version:

<https://daneshyari.com/article/5877160>

[Daneshyari.com](https://daneshyari.com)