

## SUPPLEMENTARY MATERIAL

**Supplemental Table S1. Grading Scheme for Recommendations**

Grade A	Recommendations are based on randomized trials (or systematic reviews of trials) with high levels of internal validity and statistical precision, and for which the study results can be directly applied to patients because of similar clinical characteristics and the clinical relevance of the study outcomes.
Grade B	Recommendations are based on randomized trials, systematic reviews or pre-specified subgroup analyses of randomized trials that have lower precision, or there is a need to extrapolate from studies because of differing populations or reporting of validated intermediate/surrogate outcomes rather than clinically important outcomes.
Grade C	Recommendations are based on trials that have lower levels of internal validity and/or precision, or trials reporting unvalidated surrogate outcomes, or results from non-randomized observational studies.
Grade D	Recommendations are based on expert opinion alone

**Supplemental Table S2.**

<b>Recommended Technique for Automated Office Blood Pressure (AOBP)</b>
1. Measurements should be taken with a validated sphygmomanometer known to be accurate.
2. Choose a cuff with an appropriate bladder size matched to the size of the arm. Select the cuff size as recommended by its manufacturer.
3. Place the cuff so that the lower edge is 3 cm above the elbow crease and the bladder is centered over the brachial artery. There is no rest period needed before measurement. The arm should be bare and supported with the BP cuff at heart level, as a lower position will result in an erroneously higher SBP and DBP. There should be no talking, and patients' legs should not be crossed.
4. When using automated office oscillometric devices, the patient should be seated in a quiet room (no specified period of rest). With the device set to take measures at 1- or 2-minute intervals. The first measurement is taken by a health professional to verify cuff position and validity of the measurement. The patient is left alone after the first measurement while the device automatically takes subsequent readings.
5. Record the average BP as displayed on the electronic device as well as the arm used and whether the patient was supine, sitting or standing. Record the heart rate.
<b>Recommended Technique for Office Blood Pressure Measurement (non-AOBP)</b>
1. Measurements should be taken with a sphygmomanometer known to be accurate. A validated electronic device should be used. If not available, a recently calibrated aneroid device can be used. Aneroid devices or mercury columns need to be clearly visible at eye level.
2. Choose a cuff with an appropriate bladder size matched to the size of the arm. For measurements taken by auscultation, bladder width should be close to 40% of arm circumference and bladder length should cover 80 – 100% of arm circumference. When using an automated

device, select the cuff size as recommended by its manufacturer.

3. Place the cuff so that the lower edge is 3 cm above the elbow crease and the bladder is centered over the brachial artery. The patient should be resting comfortably for 5 minutes in the seated position with back support. The arm should be bare and supported with the BP cuff at heart level, as a lower position will result in an erroneously higher SBP and DBP. There should be no talking, and patients' legs should not be crossed. The first reading should be discarded and the latter two averaged. BP should also be assessed after 2 minutes standing (with arm supported) and at times when patients report symptoms suggestive of postural hypotension. Supine BP measurements may also be helpful in the assessment of elderly and diabetic patients.

When using automated office oscillometric devices such as the BpTRU (VSM MedTech Ltd, Vancouver, Canada), the patient should be seated in a quiet room (no specified period of rest). With the device set to take measures at 1- or 2-minute intervals, the first measurement is taken by a health professional to verify cuff position and validity of the measurement. The patient is left alone after the first measurement while the device automatically takes subsequent readings. The BpTRU automatically discards the first measure and averages the next 5 measures.

For auscultation, at least three measurements should be taken in the same arm with the patient in the same position. The first reading should be discarded and the latter two averaged. Steps 4-7 are specific to auscultation.

4. Increase the pressure rapidly to 30 mmHg above the level at which the radial pulse is extinguished (to exclude the possibility of a systolic auscultatory gap).

5. Place the bell or diaphragm of the stethoscope gently and steadily over the brachial artery.

6. Open the control valve so that the rate of deflation of the cuff is approximately 2 mmHg per heart beat. A cuff deflation rate of 2 mmHg per beat is necessary for accurate systolic and diastolic estimation.

7. Read the systolic level -the first appearance of a clear tapping sound (phase I Korotkoff) and the diastolic level- the point at which the sounds disappear (phase V Korotkoff). If

Korotkoff sounds persist as the level approaches 0 mmHg, then the point of muffling of the sound is used (phase IV) to indicate the diastolic pressure. Leaving the cuff partially inflated for too long will fill the venous system and make the sounds difficult to hear. To avoid venous congestion, it is recommended that at least one minute should elapse between readings.

8. Record the BP to the closest 2 mmHg on the manometer (or 1 mmHg on electronic devices) as well as the arm used and whether the patient was supine, sitting or standing. Avoid digit preference by not rounding up or down. Record the heart rate. The seated BP is used to determine and monitor treatment decisions. The standing BP is used to examine for postural hypotension, if present, which may modify the treatment.

9. In the case of arrhythmia, additional readings with auscultation may be required to estimate the average systolic and diastolic pressure. Isolated extra beats should be ignored. Note the rhythm and pulse rate.

10. BP should be taken in both arms on at least one visit and if one arm has a consistently higher pressure, that arm should be subsequently used for BP measurement and interpretation.

### **Recommended Technique for Home Blood Pressure Measurement**

1. Measurements should be taken with a validated electronic device.

2. Choose a cuff with an appropriate bladder size matched to the size of the arm. Bladder width should be close to 40% of arm circumference and bladder length should cover 80 – 100% of arm circumference. Select the cuff size as recommended by its manufacturer.

3. Cuff should be applied to the non-dominant arm unless the SBP difference between arms is >10 mmHg, in which case the arm with the highest value obtained should be used.

4. The patient should be resting comfortably for 5 minutes in the seated position with back support.

5. The arm should be bare and supported with the BP cuff at heart level.

6. Measurement should be performed before breakfast and 2 hours after dinner, before taking medication.

7. No caffeine or tobacco in the hour and no exercise 30 minutes preceding the measurement.

8. Duplicate measurement should be done in the morning and in the evening for seven days (i.e., 28 measurements in total).

9. Average the results excluding the first day's readings.

### **Recommended Technique for Ambulatory Pressure Monitoring**

1. The appropriate sized cuff should be applied to the non-dominant arm unless the SBP difference between arms is  $>10$  mm Hg, in which case the arm with the highest value obtained should be used.

2. The device should be set to record for a duration of at least 24 hours with the measurement frequency set at 20-30 minute intervals during the day and 30-60 minutes at night.

3. A patient-reported diary to define daytime (awake), night-time (sleep), activities, symptoms and medication administration is useful for study interpretation.

4. Daytime and night-time should preferentially be defined using the patient's diary. Alternatively, pre-defined thresholds can be used (e.g. 8 AM to 10 PM for awake and 10 PM and 8 AM for night-time).

5. The ambulatory BP monitoring report should include all of the individual BP readings (both numerically and graphically), the percentage of successful readings, the averages for each time frame (daytime, night-time, 24 hours) and the "dipping" percentage (the percentage the average BP changed from daytime to night-time).

6. Criteria for a successful ambulatory BP monitoring study are:  
i. At least 70% of the readings are successful AND

ii. At least 20 daytime readings and 7 night-time readings are successful.

Abbreviations: BP, blood pressure; DBP, diastolic BP; SBP, systolic BP. Unless otherwise mentioned, steps apply to measurement by auscultation and oscillometry using an upper arm cuff.

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### Supplemental Table S3. Examples of hypertensive urgencies or emergencies

Asymptomatic diastolic BP  $\geq$ 130 mmHg

Severe elevation of BP in the setting of any of:

Hypertensive encephalopathy

Acute aortic dissection

Acute left ventricular failure

Acute coronary syndrome

Acute kidney injury

Intracranial hemorrhage

Acute ischemic stroke

Pre-eclampsia/eclampsia

Catecholamine-associated hypertension

Abbreviations: BP, blood pressure

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## Supplemental Table S4. Examples of target organ damage

### Cerebrovascular Disease

#### Stroke

Ischemic stroke and transient ischemic attack

Intracerebral hemorrhage

Aneurysmal subarachnoid hemorrhage

#### Dementia

Vascular dementia

Mixed vascular dementia and dementia of the Alzheimer's type

### Hypertensive Retinopathy

### Left Ventricular Dysfunction

### Left Ventricular Hypertrophy

### Heart Failure

### Coronary Artery Disease

Myocardial infarction

Angina pectoris

Acute coronary syndromes

### Renal Disease

Chronic kidney disease (GFR <60 ml/min/1.73 m<sup>2</sup>)

Albuminuria

### Peripheral Artery disease

Intermittent claudication

Abbreviations: GFR, glomerular filtration rate

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**Supplemental Table S5. Examples of key cardiovascular risk factors for atherosclerosis**

<p><i>Prior history of clinically overt atherosclerotic disease indicates a very high risk for a recurrent atherosclerotic event (e.g. Peripheral arterial disease, previous stroke or transient ischemic attack)</i></p>
<p><b><u>Non-Modifiable</u></b> Age <math>\geq</math>55 years Male Family history of premature cardiovascular disease (age &lt;55 in men and &lt;65 in women)</p>
<p><b><u>Modifiable</u></b> Sedentary lifestyle Poor dietary habits Abdominal obesity Dysglycemia Smoking Dyslipidemia Stress Non-adherence</p>

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**Supplemental Table S6. Examples of exogenous substances that can induce/aggravate hypertension**

Prescription Drugs:

Nonsteroidal anti-inflammatory drugs (NSAIDs), including cyclo-oxygenase-2 inhibitors (coxibs)  
Corticosteroids and anabolic steroids  
Oral contraceptive and sex hormones  
Vasoconstricting/sympathomimetic decongestants  
Calcineurin inhibitors (cyclosporin, tacrolimus)  
Erythropoietin and analogues  
Antidepressants: Monoamine oxidase inhibitors (MAOIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), selective serotonin reuptake inhibitors (SSRIs)  
Midodrine

Other substances:

Licorice root  
Stimulants including cocaine  
Salt  
Excessive alcohol intake

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## Supplemental Table S7. Hyperaldosteronism

<b>Screening:</b>														
<p>i. Plasma aldosterone and plasma renin activity or renin mass/concentration (see ii below for suggested conversion factors) should be collected as follows:</p> <p>a. In the morning after the patient has been ambulatory (sitting, standing, or walking) for at least 2 hours.</p> <p>b. Patients should be seated for 5-15 minutes prior to the blood draw.</p> <p>c. Hypokalemia should be corrected and sodium intake should be liberalized.</p> <p>d. Agents that markedly affect the results of testing (aldosterone antagonists, potassium sparing and wasting diuretics) should be withdrawn at least 4-6 weeks prior.</p> <p>e. If the results are not diagnostic, and if hypertension can be controlled with medications less likely to affect testing (slow-release verapamil, hydralazine, prazosin, doxazosin, and terazosin), repeat testing 2 weeks after withdrawing the following medications that can interfere with test accuracy: <math>\beta</math>-blockers, centrally acting <math>\alpha_2</math> agonists, angiotensin receptor blockers, angiotensin converting enzyme inhibitors, directly acting renin inhibitors, dihydropyridine calcium channel blockers.</p> <p>f. False positive results may occur with direct renin mass/concentration if the patient is a woman using an oral contraceptive pill. If possible, oral contraception should be discontinued for 1 month prior to testing, or alternately, plasma renin activity should be measured instead</p>														
<p>ii. Suggested Conversion Factors:</p> <table border="1"> <thead> <tr> <th>A. To estimate:</th> <th>B. From:</th> <th>Multiply (B) by:</th> </tr> </thead> <tbody> <tr> <td>Plasma renin concentration (ng/L)</td> <td>Plasma renin activity (ng/mL/hr)</td> <td>0.192</td> </tr> <tr> <td>Plasma renin activity (ng/L/sec)</td> <td>Plasma renin activity (ng/mL/hr)</td> <td>0.278</td> </tr> <tr> <td>Plasma aldosterone concentration (pmol/L)</td> <td>Plasma aldosterone concentration (ng/dL)</td> <td>28</td> </tr> </tbody> </table>			A. To estimate:	B. From:	Multiply (B) by:	Plasma renin concentration (ng/L)	Plasma renin activity (ng/mL/hr)	0.192	Plasma renin activity (ng/L/sec)	Plasma renin activity (ng/mL/hr)	0.278	Plasma aldosterone concentration (pmol/L)	Plasma aldosterone concentration (ng/dL)	28
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<p>iii. Interpretation of a positive screening test is dependent upon the local laboratory method for renin measurement but assumes standard reporting of aldosterone in pmol/L:</p> <table border="1"> <thead> <tr> <th>Renin method used</th> <th>Aldosterone-to-renin ratio: higher sensitivity, lower specificity</th> <th>Aldosterone-to-renin ratio: lower sensitivity, higher specificity</th> </tr> </thead> <tbody> <tr> <td>Plasma renin activity (ng/ml/h)</td> <td>555</td> <td>750</td> </tr> <tr> <td>Direct renin concentration (mIU/L)</td> <td>60</td> <td>91</td> </tr> <tr> <td>Direct renin concentration (ng/L)</td> <td>100</td> <td>144</td> </tr> </tbody> </table>			Renin method used	Aldosterone-to-renin ratio: higher sensitivity, lower specificity	Aldosterone-to-renin ratio: lower sensitivity, higher specificity	Plasma renin activity (ng/ml/h)	555	750	Direct renin concentration (mIU/L)	60	91	Direct renin concentration (ng/L)	100	144
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<b>Confirmatory Testing:</b>														

iv. If one of the following criteria is met, autonomous hypersecretion of aldosterone is confirmed (interfering drugs should continue to be held, as outlined above):

a) Saline loading tests (perform either):

i. Administer 2 litres of normal saline intravenously over 4h with the patient in a recumbent position. This test is contraindicated in the presence of severe, uncontrolled hypertension or congestive heart failure. Primary aldosteronism is defined as a post-infusion plasma aldosterone >280 pmol/L. If <140 pmol/L, primary aldosteronism is unlikely. Values in between are considered indeterminate.

ii. Administer >200 mmol/day of oral sodium (i.e., equivalent to >5 g/day of sodium; >12 g/day of sodium chloride; or >2 tsp/day of salt) for three days, with primary aldosteronism defined as a 24-hr urinary aldosterone >33 nmol/d (measured from the morning of day 3 to the morning of day 4). If <28 nmol/day, primary aldosteronism is unlikely.

b) A plasma aldosterone to PRA ratio >1400 pmol/L/ng/ml/hr (or >270 pmol/L/ng/L), with a plasma aldosterone >440 pmol/L.

c) Captopril suppression test: Administer 25-50 mg captopril orally after the patient has been sitting or standing for 1 hour. While seated, renin and plasma aldosterone levels should be measured at time zero and 1 to 2 hours after ingestion. Primary aldosteronism is unlikely if plasma aldosterone is suppressed by >30% following captopril ingestion. In primary aldosteronism, plasma aldosterone remains elevated, while renin remains suppressed.

### **Subtype Classification:**

v. Differentiating potential causes of confirmed primary aldosteronism (unilateral vs. bilateral secretion):

a) CT scanning (or MRI) can help localize the presence of adrenal lesion(s). If imaging demonstrates an adrenal lesion/adenoma, it may be non-functional. Therefore, if surgery to remove a suspected unilateral source of primary aldosteronism is planned, selective adrenal venous sampling should be considered first (to verify that abnormally appearing adrenal gland is the source of hypersecretion).

b) For patients with established primary hyperaldosteronism and in whom surgery is an option, selective adrenal venous sampling should be considered to differentiate unilateral from bilateral overproduction of aldosterone.

c) Adrenal venous sampling should be conducted in centers with experience in performing this diagnostic technique.

d) We suggest selective genetic testing for glucocorticoid remediable aldosteronism in patients with confirmed primary aldosteronism and either:

- i. A family history of primary aldosteronism or stroke at young age ( $\leq 40$  years); or
- ii. Onset of hypertension  $\leq 20$  years and negative imaging.

**Treatment:**

vi. Treatment is informed by subtype classification (unilateral vs. bilateral secretion):

a) Surgery with ipsilateral adrenalectomy should be considered for unilateral forms of hypersecretion (e.g., aldosterone-producing adenomas). Patients should be followed closely after surgery as a significant proportion may remain hypertensive.

b) Mineralocorticoid receptor antagonists (particularly spironolactone in low to moderate doses) are quite effective for those with bilateral disease (e.g., idiopathic/bilateral adrenal hyperplasia). Monitoring of potassium and creatinine are required, especially if combined with angiotensin receptor blockers or angiotensin converting enzyme inhibitors.

c) Mineralocorticoid receptor antagonists should be considered for individuals who are not surgical candidates or for those who refuse surgery (even with confirmed unilateral hypersecretion). Blood pressure lowering responses to other antihypertensives (e.g., angiotensin receptor blockers, angiotensin converting enzyme inhibitors, and calcium channel blockers) are often only modest-to-moderate.

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## Supplemental Table S8. Pheochromocytoma

<b>Screening and diagnosis:</b>
<p>i. To screen for pheochromocytoma:</p> <ul style="list-style-type: none"><li>a. 24-hr urinary total metanephrines and catecholamines (sensitivity 90-95%) or 24-hr urine fractionated metanephrines (sensitivity of about 95%) should be measured. Concomitant measurement of 24-hr urine creatinine should also be performed to confirm accurate collection.</li><li>b. Plasma free metanephrines and free normetanephrines, where available, may also be considered (sensitivity up to 99%).</li><li>c. Urinary VMA measurements should not be used for screening.</li></ul>
<p>ii. Keep in mind that potential false positives should be considered in the setting of:</p> <ul style="list-style-type: none"><li>a. Interfering drugs</li><li>b. Incorrect patient preparation and positioning (for plasma metanephrine measures)</li><li>c. Mild elevation of screening values (i.e., less than two-fold upper limit of normal)</li><li>d. Normal values on repeat testing</li><li>e. Only 1 abnormal biochemical test in the panel of assays</li><li>f. Atypical imaging results for pheochromocytoma</li><li>g. A low pre-test probability of pheochromocytoma</li><li>h. Acute illness/hospitalization</li></ul>
<p>iii. In the presence of borderline biochemical test results or potentially false positive results, repeat testing may be performed and/or the clonidine suppression test may be used. This should be done before imaging is requested to avoid identifying potential incidentalomas.</p>
<p>iv. Imaging (e.g., CT, MRI, +/- MIBG) should generally be performed only done after biochemical confirmation of disease.</p>
<b>Treatment:</b>
<p>v. Definitive treatment is with surgical resection. Preoperative planning is recommended for blood pressure control and volume expansion:</p> <ul style="list-style-type: none"><li>a) <math>\alpha</math>-blockade should be started 10-14 days preoperatively. Typical options include phenoxybenzamine (a long-acting, non-selective irreversible <math>\alpha</math>-blocker), prazosin, or doxazosin.</li><li>b) Other anti-hypertensives may be added as necessary but diuretics should be avoided if possible. Oral <math>\beta</math>-blockers may be considered after achieving adequate <math>\alpha</math>-blockade to control tachycardia and prevent arrhythmias during surgery.</li><li>c) Volume replacement and liberal sodium intake should be encouraged as volume contraction is common in this condition. Intravenous volume expansion in the perioperative period is recommended to prevent postoperative shock.</li></ul>

vi. Postoperatively, long-term follow-up is recommended with urinary or plasma metanephrines to screen for recurrence, especially in those with a genetic predisposition.

vii. Genetic testing should be considered for individuals <50 years of age and for all patients with multiple lesions, malignant lesions, bilateral pheochromocytomas or paragangliomas, or a family history of pheochromocytoma or paraganglioma.

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**Supplemental Table S9. Dietary Approaches to Stop Hypertension (DASH) diet**

<b>Food Group</b>	<b>Daily Serving</b>	<b>Examples and Notes</b>
Whole Grains	6-8	Whole wheat breads, cereal, oatmeal, rice, pasta, quinoa, barley, low fat, low sodium crackers
Vegetables	4-5	Dark green and orange fresh or frozen vegetables: Tomatoes, leafy greens, carrots, peas, squash, spinach, peppers, broccoli, sweet potatoes
Fruits	4-5	Have fruit more often than juice: Apples, apricots, bananas, grapes, oranges, melons, peaches, berries, mango
Low-fat or fat-free milk foods or alternatives	2-3	Skim, 1% milk, fortified soy beverage, or yogurt, 6-18% milk fat (MF) cheese
Meats, poultry, fish	<6 ounces	Select only lean meats. Choose fish like char, herring, mackerel, salmon, sardines and trout. Trim away fats. Broil, roast or boil. No frying. Remove skin from poultry. Low sodium, low fat deli meats
Nuts, seeds, legumes	4-5/week	Almonds, peanuts, walnuts, sunflower seeds, soybeans, lentils, chick peas, dried peas and beans, tofu
Fats and oils	2-3 tsp	Soft margarines, mayonnaise, vegetable oil (olive, corn, canola, or safflower), salad dressing
Sweets	≤5 Tbsp/week	Sugar, jelly, jam, hard candy, syrups, sorbet, chocolate

DASH eating plan available at [www.nhlbi.nih.gov/files/docs/public/heart/hbp\\_low.pdf](http://www.nhlbi.nih.gov/files/docs/public/heart/hbp_low.pdf);

Examples of serving sizes are listed in Canada's Food Guide (comparable to DASH) available at [www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php](http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php)

## Supplemental Table S10. Possible reasons for poor response to antihypertensive therapy

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### Poor adherence

- Dietary
- Physical activity
- Medication

### Associated conditions

- Obesity
- Tobacco use
- Excessive alcohol consumption
- Sleep apnea
- Chronic pain

### Drug interactions

- Nonsteroidal anti-inflammatory drugs (including cyclo-oxygenase-2 inhibitors)
- Oral contraceptives
- Corticosteroids and anabolic steroids
- Sympathomimetics and decongestants
- Cocaine
- Amphetamines
- Erythropoietin
- Cyclosporine, tacrolimus
- Licorice
- Over-the-counter dietary supplements (e.g. ephedra, ma huang, bitter orange)
- Monoamine oxidase inhibitors, certain selective serotonin reuptake inhibitors and serotonin-norepinephrine reuptake inhibitors

### Suboptimal treatment regimens

- Dosage too low
- Inappropriate combinations of antihypertensive agents

### Volume overload

- Excessive salt intake
- Renal sodium retention (pseudotolerance)

### Secondary hypertension

- Renal insufficiency
  - Renovascular disease
  - Primary hyperaldosteronism
  - Thyroid disease
  - Pheochromocytoma and other rare endocrine causes
  - Obstructive sleep apnea
- 

Note that causes of ‘pseudo-resistance’ (such as white coat hypertension or pseudo-hypertension in the elderly) should be ruled out first.

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**Supplemental Table S11. Cardiovascular risk factors for consideration of statin therapy in non-dyslipidemic patients with hypertension**

Male sex
Age $\geq 55$ years
Left ventricular hypertrophy
Other electrocardiographic abnormalities: left bundle branch block, left ventricular strain pattern, abnormal Q-waves or ST-T changes compatible with ischemic heart disease
Peripheral arterial disease
Previous stroke or transient ischemic attack
Microalbuminuria or proteinuria
Diabetes mellitus
Smoking
Family history of premature cardiovascular disease
Total cholesterol to high-density lipoprotein ratio $\geq 6$

If hypertensive patients have  $\geq 3$  of these risk factors, statins should be considered.

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## Supplemental Table S12. Strategies to improve patient adherence

<p>Assist your patient by</p> <ul style="list-style-type: none"><li>• Tailoring pill-taking to fit patient's daily habits (Grade D)</li><li>• Simplifying medication regimens to once-daily dosing (Grade D)</li><li>• Replacing multiple pill antihypertensive combinations with single pill combinations (Grade C)</li><li>• Using unit-of-use packaging (of several medications to be taken together) (Grade D)</li><li>• Using a multidisciplinary team approach to improve adherence to an antihypertensive prescription (Grade B)</li></ul>
<p>Assist your patient in getting more involved in their treatment by</p> <ul style="list-style-type: none"><li>• Encouraging greater patient responsibility/autonomy in monitoring their blood pressure and adjusting their prescriptions (Grade C)</li><li>• Educating patients and their families about their disease and treatment regimens (Grade C)</li></ul>
<p>Improve your management in the office and beyond by</p> <ul style="list-style-type: none"><li>• Assessing adherence to pharmacological and nonpharmacological therapy at every visit (Grade D)</li><li>• Encouraging adherence with therapy by out-of-office contact (either by phone or mail), particularly during the first three months of therapy (Grade D)</li><li>• Coordinating with pharmacists and work-site health care givers to improve monitoring of adherence with pharmacological and lifestyle modification prescriptions (Grade D)</li><li>• Utilizing electronic medication compliance aids (Grade D)</li></ul>

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## **Supplemental Appendix S1: Members of the Hypertension Canada 2017 Guidelines Committee**

**Chair:** D. Rabi

**Central Review Committee (CRC):** S. Daskalopoulou, K. Dasgupta, K. Zarnke, K. Nerenberg, A. Leung, K. Harris, K. McBrien, S. Butalia, M. Nakhla

**Adherence Strategies for Patients:** T. Campbell, R. Feldman, A. Milot, D. Drouin, K. Lavoie, R. Tsuyuki

**Cardiovascular Risk Assessment:** S. Grover, G. Tremblay, A. Milot

**Echocardiography:** G. Honos

**Endocrinological Forms of Hypertension:** A. Prebtani, G. Kline, E. Schiffrin

**Hypertension & Diabetes:** R. Gilbert, L. Leiter, C. Jones, S. Tobe, V. Woo

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**Pharmacotherapy for Hypertensive Patients Without Compelling Indications:** G. Dresser, R. Herman, P. Hamet, E. Burgess, R. Lewanczuk, J. Grégoire, S. Gryn, L. Poirier

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## SUPPLEMENTAL APPENDIX S2: Commercial Conflicts of Interest

Bacon, Simon	Consultancy/speaker fees from Kataka Medical Communications, Schering-Plough, Merck, Novartis Investigator-initiated grant/research support from GSK, Abbvie
Benoit, Genevieve	Consulting/Honoraria: Novartis
Boulanger, Jean-Martin	Conferences: Boehringer-Ingelheim, Pfizer, Merz, Allergan, Bayer, Sanofi-Aventis
Burgess, Ellen	Speaker's Bureau: Merck Co-ordinating Investigator: Bayer Inc. Consulting: Pfizer
Campbell, Norm	Consultant: Novartis Foundation
Campbell, Tavis	Speaker for: Pfizer, Abbvie, Janssen, Bayer, Novo Nordisk Grant funding: Abbvie
Cloutier, Lyne	Honoraria: Merck, Servier Consulting fees: Servier
Dresser, George	Honoraria: Servier Canada Inc., Merck, BMS, Pfizer, Impress Pharma, Bayer, Novartis, BI, BGP Pharma Grant: Servier Canada Inc.
Feldman, Ross	Advisory Boards: GSK, Novartis, Sanofi, Servier CME support: Bayer, Servier Grant support: Bayer
Gelfer, Mark	Consultant for Welch Allyn Inc. (in 2015)
Gilbert, Richard	Research grants: Merck, AstraZeneca, BI Advisory Boards: AstraZeneca, Merck, BI, Servier

	Honoraria for CME events: Merck, AZ, BI, Advisory Board, travel grant, CME: Janssen
Grégoire, Jean C.	Consulting Fees: Aegerion, Amgen, AZ, Bayer, BMS, BI, Novartis, Sanofi, Takeda Speaker's Bureau: Amgen, AZ, Bayer, BMS, BI, Merck, Novartis, Sanofi, Servier, Valeant
Grover, Steven	Principal in Clinementrica Inc.; Member of Board of Directors of SOLO
Gryn, Steve	Speaking or Consulting Fees: Novartis, Bayer, Servier, Sanofi
Gupta, Milan	Advisory board/speaking honoraria: Valeant, Novartis, Abbott
Hamet, Pavel	Scientific Advisor: Servier Canada President: Opti-Thera Inc. President and Founder: Medpharmgene
Harris, Kevin	Consultant: St. Jude Medical, Janssen
Hegele, Robert	Advisory Board / Consultant: Aegerion, Amgen, Boston Heart Diagnostics, Gemphire, Ionis, Pfizer, Sanofi Speaker's Bureau: Aegerion, Amgen, Pfizer, Sanofi Research Grants: Aegerion, Amgen, Gemphire, Ionis, The Medicines Company, Pfizer, Sanofi
Hill, Michael D.	Grant to University of Calgary from BI and Consultant for Merck
Honos, George	Speaker Honoraria and/or Advisory Board Participant: Merck, Servier, Novartis, Sanofi, Pfizer-BMS, AZ, Pfizer, BI, Amgen, Novo Nordisk, Eli Lilly, Lantheus
Howlett, Jonathan	Research Grants: AstraZeneca, Novartis, Bayer, Servier Consultant Fees: AstraZeneca, Bayer, Novartis, Servier, Pfizer, Merck, St. Jude, BI, BMS
Khara, Milan	Advisory Board for Pfizer and Honoraria from Janssen

Lavoie, Kim	Consulting/Speaking Honoraria: Bayer, Mundi Pharma, Novartis, Janssen, GSK, Abbvie, Takeda, BI, AZ, Almirall, Merck, Pfizer Grants: Abbvie, GSK
Lear, Scott	Consultant: Curatio Networks Inc.
Leiter, Lawrence	Research funding from, provided CME, and/or have acted as an advisor to AZ, Bayer, BI, Merck, Pfizer, Sanofi, Servier
Lewanczuk, Richard	Provided accredited CME for: Merck, Valeant, Abbott, Servier
Logan, Alexander	Research funding from CIHR and Philips Respironics
McFarlane, Phil	Consultancy: Amgen, AZ, Baxter, Bayer, BI, Ilanga, Janssen, Lilly, Otsuka, Sanofi-Aventis, Takeda, Valeant  Grants/Research: Amgen, AZ, Bayer, BI, GSK, Janssen, Novartis, Novo-Nordisk, Ortho-Biotech, Otsuka, Reata Lectures: Abbott, Bayer, BMS, BI, GSK, Merck, Novartis, Otsuka, Sanofi-Aventis, Servier, Takeda, Valeant
Moullec, Gregory	Grant: Astra Zeneca
Oh, Paul	Advisory Board: Amgen, AstraZeneca, Novo Nordisk, Pfizer, Roche, Sanofi
Padwal, Raj S.	Research: Novo Nordisk, Valencia Technologies Speaking/Consulting: Servier, Amgen
Pipe, Andrew	Advisory Boards: Johnson & Johnson, Pfizer Research Grants: Pfizer
Prebtani, Ally	Servier, Mylan
Rabkin, Simon	Honorarium: Servier

Schiffrin, Ernesto	Advisory Boards: Novartis USA, Actelion France Grant: Servier France
Selby, Peter	Speaker's Bureau/Honoraria: BMS Grant/Research Support: Pfizer, Shoppers Drug Mart Consulting Fees: Johnson & Johnson Group of Companies, V-CC Systems Inc. (eHealth Behaviour Change Software Co.), MedPlan Communications Other financial/material support: J&J, Novartis Spouse: Consulting fees from BI; Speaker's Bureau/Honoraria from Thrombosis & Hemostasis Summit of North America Conference
Sharma, Mike	Speaker's Honorarium and/or Advisory Board: BI, Bayer, BMS
Tobe, Sheldon	Research: Abbvie and Bayer
Trudeau, Luc	Valeant, Mylan, Servier, Merck, Amgen
Tsuyuki, Ross	Investigator-initiated research grant and consulting/speaking honoraria: Merck Canada
Vallée, Michel	Consultant, Speaker : Servier, Valeant Research: Servier

**NO CONFLICTS**

Bolli, Peter	Moe, Gordon
Burnes, Kevin	Nakhla, Meranda
Butalia, Sonia	Nerenberg, Kara
Cote, Anne-Marie	Penner, Brian
Coutts, Shelagh	Poirier, Luc
Dasgupta, Kaberi	Prasad, Ramesh
Daskalopoulou, Stella	Rabi, Doreen M.
Dionne, Janis	Reid, Debra
Drouin, Denis	Ruzicka, Marcel

Feber, Janusz  
Fournier, Anne  
Herman, Robert  
Hiremath, Swapnil  
Jones, Charlotte  
Kaczorowski, Janusz  
Kline, Gregory  
Lamarre-Cliche, Maxime  
Leung, Alexander  
Lindsay, Patrice  
Magee, Laura  
McBrien, Kerry  
McLean, Donna  
Milot, Alain

Sivapalan, Praveena  
Tran, Karen  
Tremblay, Guy  
Wilson, Thomas  
Woo, Vincent  
Zarnke, Kelly

**NOT YET RECEIVED**

Gubitz, Gord