



# PHARMACIST HEALTH COACHING

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## CARDIOVASCULAR PROGRAM

APPENDIX A — PHARMACIST RESOURCES

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# I. MEDICATION ASSESSMENT

### THE FACTS<sup>1</sup>

- Patients with hypertension and/or high cholesterol take **THREE TIMES MORE DRUGS** than patients without these conditions.
- 36% of hypertensive patients and 42% of high cholesterol patients are **NON-ADHERENT** to their drug therapy.

### MORISKY MEDICATION ADHERENCE SCALE (MMAS-4)<sup>2</sup>

ADHERENCE	“YES” ANSWERS
High .....	0
Moderate .....	1-2
Low .....	3-4

### STRATEGIES TO IMPROVE MEDICATION ADHERENCE<sup>3</sup>

#### ASSIST YOUR PATIENTS TO ADHERE TO THEIR MEDICATIONS BY:

- Tailoring pill-taking to fit patient’s daily habits
- Simplifying medication regimens to once-daily dosing (whenever possible)
- Replacing two anti-hypertensive agents with a fixed dose combination (where available and appropriate), provided it is the same combination the patient is already taking
- Utilizing unit-of-use packaging (of several medications to be taken together)

#### ASSIST YOUR PATIENTS IN GETTING MORE INVOLVED IN THEIR TREATMENT BY:

- Encouraging greater patient responsibility/ autonomy in monitoring their blood pressure and adjusting their prescription
- Educating patients and their families about their disease and treatment regimens

Adherence to an antihypertensive prescription can be improved by a multidisciplinary team approach.

# II. BLOOD PRESSURE

### THE FACTS<sup>4</sup>

- Hypertension is the **MOST PREVALENT CHRONIC CONDITION** in Canada.
- **ONE** in **FIVE CANADIANS** have high blood pressure.
- **34% OF TREATED HYPERTENSIVE** patients are **NOT UNDER CONTROL**.

### BLOOD PRESSURE RANGES<sup>3</sup>

AOBP (AUTOMATED OFFICE BP)	High	SBP $\geq$ 135 or DBP $\geq$ 85
NON-AOBP	High-Normal High	SBP 130-139 and/or DBP 85-89 SBP $\geq$ 140 or DBP $\geq$ 90

### BLOOD PRESSURE TARGETS<sup>3</sup>

INDICATIONS	CONSIDER TREATMENT	TARGET
High risk (SPRINT population)	$\geq$ 130 / NA	$\leq$ 120 /NA
Moderate to high risk (TOD or CV risk factors)	$\geq$ 140/ 90	<140/90
Low risk (no TOD or CV risk factors)	$\geq$ 160 /100	
Diabetes	$\geq$ 130/ 80	<130/80

**TOD** = target organ damage

**High Risk:** Having at least one of the following factors:

- a) Clinical or subclinical cardiovascular disease;
- b) Chronic kidney disease (nondiabetic nephropathy, proteinuria <1g/d, estimated glomerular filtration rate 20-59 ml/min/1.73m<sup>2</sup>);
- c) Estimated 10-year global Framingham Risk >15%; OR
- d) Age  $\geq$  75 years.

### FACTORS THAT AGGRAVATE HYPERTENSION<sup>3</sup>

#### PRESCRIPTION DRUGS:

- NSAIDS (including coxibs)
- Corticosteroids and anabolic steroids
- Oral contraceptives and sex hormones
- Vasoconstricting decongestants
- Calcineurin inhibitors (cyclosporin, tacrolimus)
- Erythropoietin and analogues
- Antidepressants — MAOIs, SNRIs, SSRIs
- Midodrine

#### OTHER SUBSTANCES:

- Licorice root
- Stimulants, including cocaine and caffeine
- Salt
- Excessive alcohol use

### PATIENT BP MONITORING TIPS<sup>3</sup>

#### DO:

- Use a validated electronic device
- Carefully read instructions for your blood pressure monitor
- Go to the bathroom before taking your pressure
- Sit comfortably: feet flat on floor, back supported, arm at heart level
- A bare arm is the preferred method (or a thin layer of clothing) on your upper arm
- Put cuff on and wait for five minutes
- Take two readings – wait one to two minutes between readings
- Record date and time with measurement
- Show your readings to your health care provider

#### DON'T:

- Cross your legs
- Take your blood pressure if you're in a hurry
- Smoke or drink caffeine one hour before measuring
- Exercise 30 minutes before measuring
- Eat a big meal for two hours before measuring
- Wear tight clothing
- Talk or watch TV during a measurement
- Measure your blood pressure if you are cold, nervous, uncomfortable, or in pain

### EFFECT OF LIFESTYLE MODIFICATION ON BLOOD PRESSURE<sup>5</sup>

LIFESTYLE CHANGE	MODIFICATION	IMPACT ON SBP/DBP
<b>Sodium Intake</b>	Reduce sodium intake towards 2300 mg (one tsp. of salt) per day.	↓ 5.1 / 2.7
<b>Physical Activity</b>	For all patients, prescribe the accumulation of 30 to 60 minutes of moderate-intensity dynamic exercise (walking, jogging, cycling, swimming) four to seven days a week; higher intensities of exercise are no more effective.	↓ 4.9 / 3.7
<b>Weight</b>	Maintenance of a healthy body weight is recommended for non-hypertensive individuals and hypertensive patients. All overweight hypertensive individuals should be advised to lose weight through a multidisciplinary approach that includes dietary education, increased physical activity, and behavioural intervention.	↓ 1.1 / 0.9
<b>Alcohol</b>	Limit of two to three drinks a day to a weekly maximum of 15 drinks for men and 10 drinks for women. One standard drink is considered 355 ml of 5% beer, 148 ml of 12% wine, 44 ml of 40% spirits, or 17.2 ml of ethanol.	↓ 3.9 / 2.4
<b>Diet</b>	Follow the DASH eating plan. Emphasize fruits, vegetables, low-fat dairy products, dietary and soluble fibre, whole grains, protein from plant sources, reduced saturated fat and cholesterol.	↓ 11.4 / 5.5

### III. CHOLESTEROL

#### CHOLESTEROL TARGETS<sup>6</sup>

RISK LEVEL / CATEGORY	PRIMARY TARGET LDL	ALTERNATIVE TARGET
<b>High</b> (FRS $\geq$ 20%) or statin-indicated condition	<2 mmol/L or > 50% decrease in LDL-C	Apo B < 0.8 g/L Non HDL-C <2.6 mmol/L
<b>Intermediate</b> (FRS 10%-19%)	< 2 mmol/L or > 50% decrease in LDL-C	Apo B < 0.8 g/L Non HDL-C < 2.6 mmol/L
<b>Low</b> (FRS < 10%)	Pharmacologic therapy generally not indicated	

### IV. SMOKING<sup>7</sup>

- Within **ONE YEAR** of quitting, your added risk of coronary heart disease is cut in half of that of a smoker.
- Within **FIVE YEARS**, your risk of having a stroke will be nearly that of a non-smoker.
- Within **10 YEARS**, your risk of dying from lung cancer is cut in half.
- Within **15 YEARS**, your risk of coronary heart disease will be similar to that of a non-smoker.

### V. LIFESTYLE

#### CANADA'S FOOD GUIDE RECOMMENDATIONS<sup>8</sup>

FOOD	SERVINGS/DAY	EXAMPLE OF SERVING SIZE
Grain products	6–8	1 slice bread, ½ bagel, ½ cup cooked rice, pasta, or quinoa, ¾ cup hot cereal
Fruits and vegetables	7–10	½ cup fresh, frozen, canned fruit or vegetable, 1 cup salad
Milk and alternatives	2–3	1 cup milk, ¾ cup yogurt, 1½ ounce cheese
Meat and alternatives	2–3	2 eggs, 2 tablespoons peanut butter, ¾ cup cooked beans, 2½ ounces cooked fish, shellfish, poultry, or lean meat
Fats and oils	2–3	1 tablespoon canola, olive, flaxseed oil
Sodium	≤ 2300 mg <sup>9</sup>	≤1 teaspoon

Refer to Health Canada's "Eating Well with Canada's Food Guide" for serving size description.

### DASH DIET<sup>10</sup>

FOOD	SERVINGS/DAY	EXAMPLE OF SERVING SIZE
Whole grain products	6–8	1 slice bread, 1 cup cereal, ½ cup rice or pasta
Fruit and vegetables	8–10	1 medium fruit, ¼ cup dried fruit, ½ cup frozen fruit or vegetable, 1 cup raw leafy vegetable, ½ cup cooked vegetable
Low-fat or fat-free dairy products	2–3	1 cup milk, 1 cup yogurt, 1½ ounce cheese
Lean meats, poultry, and fish	< 6 ounces	1 ounce cooked lean meats, skinless poultry, or fish, 1 egg
Fats, oils	2–3	1 teaspoon soft margarine or vegetable oil, 1 tablespoon low-fat mayonnaise, 2 tablespoons light salad dressing
Sodium	≤ 2300 mg <sup>9</sup>	≤1 teaspoon
Nuts, seeds, legumes	4–5*	⅓ cup nuts, 2 tablespoons seeds or peanut butter, ½ cup cooked beans or peas

\*Servings per week

### CANADIAN PHYSICAL ACTIVITY GUIDELINES<sup>11</sup> & PHYSICAL ACTIVITY TIPS FOR ADULTS (18–64 YEARS)<sup>12</sup>

#### CANADIAN SOCIETY FOR EXERCISE PHYSIOLOGY



150 minutes of moderate- to vigorous-intensity physical activity per week



Muscle and bone strengthening activities at least two times per week



↑↑ physical activity = ↑↑↑ health benefits

**MODERATE-INTENSITY:** will cause you to sweat and breathe harder

**VIGOROUS-INTENSITY:** will cause you sweat and be “out of breath”

### VI. CARDIOVASCULAR RISK ASSESSMENT

#### THE FACTS<sup>4</sup>

- CV disease accounts for **ONE-THIRD OF ALL DEATHS** in Canada.
- Every **SEVEN MINUTES**, someone **DIES** from **HEART DISEASE AND STROKE**.
- Costs the Canadian economy more than **\$20.9 BILLION** annually.
- **NINE IN 10** Canadians have at least one risk factor.

#### NON-MODIFIABLE RISK FACTORS<sup>3</sup>

- Age  $\geq$  55
- Male sex
- Family history of premature cardiovascular disease (age  $<$ 55 in men and  $<$  65 in women)
- Prior history of atherosclerotic disease (e.g., peripheral arterial disease, previous stroke, or transient ischemic attack)

#### MODIFIABLE RISK FACTORS<sup>3</sup>

- Hypertension
- Dyslipidemia
- Smoking
- Poor glycemic control
- Sedentary lifestyle
- Poor dietary habits
- Abdominal obesity
- Stress
- Non-adherence

#### CALCULATING CARDIOVASCULAR AGE<sup>6</sup>

To calculate cardiovascular age visit the McGill Comprehensive Health Improvement Program <http://myhealthcheckup.ca>.

#### CALCULATING CARDIOVASCULAR RISK<sup>13</sup>

To calculate cardiovascular risk based on the Framingham Risk Assessment go online to <http://cvdrisk.nhlbi.nih.gov/>.

**DISCLAIMER:** Note the information provided in this document is intended for guidance and informational purposes only and is subject to change without notice. Pharmacists are expected to stay current and use the most recent version of the published guidelines and available resources. Please use professional judgment when information sources used during the course of this program conflict with the information contained in this document. Green Shield Canada will not be liable for any errors in the material, nor for any actions taken in reliance thereon.

### REFERENCES

<sup>1</sup>Green Shield Canada 2013 Drug Study.

<sup>2</sup>Morisky DE, Green LW, Levine DM. Concurrent and Predictive Validity of a Self-Reported Measure of Medication Adherence and Long-Term Predictive Validity of Blood Pressure Control. *Med Care* 1986; 24:67-74.

<sup>3</sup>Hypertension Canada. 2017 Hypertension Canada Guidelines for the Management of Hypertension. Available at: <http://guidelines.hypertension.ca/>.

<sup>4</sup>Heart and Stroke Foundation. Statistics. Available at: <http://www.heartandstroke.com/site/c.iklQLcMWJtE/b.3483991/k.34A8/Statistics.htm>.

<sup>5</sup>Heart and Stroke Foundation. Lifestyle changes to manage your high blood pressure. Available at: [http://www.heartandstroke.com/site/c.iklQLcMWJtE/b.4091465/k.907F/Heart\\_disease\\_\\_Lifestyle\\_changes\\_to\\_manage\\_your\\_high\\_blood\\_pressure.htm](http://www.heartandstroke.com/site/c.iklQLcMWJtE/b.4091465/k.907F/Heart_disease__Lifestyle_changes_to_manage_your_high_blood_pressure.htm).

<sup>6</sup>2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. *Canadian Journal of Cardiology*. 32 (2016) 1263 – 1282.

<sup>7</sup>Heart and Stroke Foundation. Smoking, heart disease and stroke. Available at: <http://www.heartandstroke.com/site/c.iklQLcMWJtE/b.3484037/k.CD84/Smoking.htm>.

<sup>8</sup>Eating Well with Canada's Food Guide. Available at: <http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php>.

<sup>9</sup>Health Canada: Sodium in Canada. Available at: <http://www.hc-sc.gc.ca/fn-an/nutrition/sodium/index-eng.php>.

<sup>10</sup>Heart and Stroke Foundation. The DASH Diet to lower blood pressure. Available at: [http://www.heartandstroke.on.ca/site/c.pvl3leNWJwE/b.4119695/k.9ECB/The\\_DASH\\_Diet\\_to\\_lower\\_blood\\_pressure.htm](http://www.heartandstroke.on.ca/site/c.pvl3leNWJwE/b.4119695/k.9ECB/The_DASH_Diet_to_lower_blood_pressure.htm).

<sup>11</sup>Canadian Society of Exercise Physiology. Canadian Physical Activity and Sedentary Behavior Guidelines. Available at: [http://www.csep.ca/CMFiles/Guidelines/CSEP\\_Guidelines\\_Handbook.pdf](http://www.csep.ca/CMFiles/Guidelines/CSEP_Guidelines_Handbook.pdf).

<sup>12</sup>Public Health Agency of Canada. Available at <http://www.phac-aspc.gc.ca/hp-ps/hl-mvs/pa-ap/07paap-eng.php>.

<sup>13</sup>CVD Risk Check: Point-of-care cardiovascular risk assessment tool. Available at <https://www.cvdriskchecksecure.com/Default.aspx>.