

Patient recommendations

Blood Pressure Canada
Heart and Stroke Foundation of Canada
Public Health Agency of Canada
Canadian Hypertension Education Program (CHEP)
Canadian Hypertension Society
Canadian Diabetes Association

Hypertension in Diabetes

High Blood Pressure and Diabetes

Your heart pumps blood around your body. Blood pressure is the force of your arteries pushing against the blood. This force is necessary to make blood flow, delivering oxygen and nutrients throughout your body. However, **high blood pressure**, also called **hypertension**, means there is too much pressure in your arteries. This can damage them and cause health problems. Hypertension is an important risk factor for the

development and worsening of many complications of diabetes, including diabetic eye disease and kidney disease. Most people with diabetes also have hypertension.

Increased
blood pressure
represents a major health
risk to people with
diabetes

Having diabetes increases your risk of developing high blood pressure and other cardiovascular problems, because diabetes leads to hardening of your arteries. **Two thirds** of Canadians with hypertension and diabetes have uncontrolled blood pressure. Finding high blood pressure **early**, treating and keeping it in the normal range can reduce your risk of developing many complications of diabetes.

2009 marks the tenth consecutive year that the Canadian Hypertension Education Program (CHEP) has updated recommendations for the management of hypertension for health professionals and the fourth year that this public version of the recommendations was produced.

How is blood pressure measured?

We measure blood pressure with two numbers (e.g. 124/79 mmHg). The first number is called the **systolic** pressure and the second is called the **diastolic** pressure.

Systolic pressure is your highest blood pressure measurement. It occurs when your heart contracts. **Diastolic** pressure is your lowest measurement, and it occurs when your heart relaxes and fills with blood. The higher your systolic or diastolic pressure, and the longer it stays high, the more damage to your blood vessels.

Should you monitor your blood pressure?

Whether or not you have high blood pressure, it is important to have your blood pressure checked regularly. Nine out of 10 Canadians will develop hypertension during their lifetime. High blood pressure has no warning signs or symptoms – which is why it is often called a ‘silent killer.’

People with diabetes are twice as likely to develop high blood pressure as those without diabetes.

Have your blood pressure checked at every visit by a health care provider. You should also monitor your blood pressure more often at home. If home blood pressure readings are done properly they may reflect your true pressure more than those done in the doctor’s office.

Regular monitoring helps ensure that high blood pressure is diagnosed and controlled before it leads to serious health problems.

Know what your blood pressure is and remember that both numbers are important. If either the systolic or diastolic number is usually high, you probably have high blood pressure.



What should your blood pressure be?

SYSTOLIC	DIASTOLIC
Less than 130 mmHg	Less than 80 mmHg

If you have diabetes, blood pressure of more than 130/80 mmHg measured in a doctor’s office is considered high.

Nutrition Facts Valeur nutritive	
Per 1/6 pizza (148 g) pour 1/6 de pizza (148 g)	
Amount Teneur	% Daily Value % valeur quotidienne
Calories / Calories 310	
Fat / Lipides 7 g	11 %
Saturated / saturés 3.5 g + Trans / trans 0.2 g	19 %
Cholesterol / Cholestérol 15 mg	
Sodium / Sodium 780 mg	33 %
Carbohydrate / Glucides 45 g	15 %
Fibre / Fibres 2 g	8 %
Sugars / Sucres 3 g	
Protein / Protéines 15 g	
Vitamin A / Vitamine A	8 %
Vitamin C / Vitamine C	35 %
Calcium / Calcium	25 %
Iron / Fer	20 %

It is especially important to limit dietary sodium (salt) if you have kidney disease. Watch what you eat and always read the labels.

- Read labels carefully. Similar foods may have high or low sodium additives. Choose foods that have less salt. **Look for foods that provide 10% or less of your daily value for sodium.**
- Add very little or no salt to food that you prepare.
- Restaurant and fast foods are usually high in salt. Ask for low salt choices or for less salt to be added to your food.
- The following foods may be high in sodium. Read the nutrition facts table before selecting these foods:
 - ketchup, prepared mustard, soy sauce, chutneys, steak or barbecue sauce
 - pickles and olives
 - bouillon cubes
 - commercially prepared or cured meats or fish (such as luncheon meats or canned sardines)
 - canned or bottled foods and other packaged convenience foods
 - salted nuts, salted crackers, chips, popcorn, and pretzels.

Did you know?

- Increased blood pressure represents a major health risk to people with diabetes. Sixty to eighty percent of people with diabetes die of cardiovascular complications and up to 75% of specific cardiovascular complications are caused by high blood pressure.
- Hypertension is also a major factor contributing to kidney failure and eye disease in people with diabetes.
- Two thirds of Canadians with hypertension and diabetes have uncontrolled blood pressure.
- Reducing blood pressure in people with diabetes is one of the most effective medical interventions available to reduce death and disability.

Measuring and tracking your blood pressure

Measuring and tracking your blood pressure regularly, and keeping a record, can be very useful. This information helps your health care provider know whether you are at risk of developing high blood pressure, and how well your blood pressure is controlled. If you have been diagnosed with high blood pressure, keeping track helps you see the benefits of treatments and lifestyle changes. It also reminds you to stick to your treatment plan.



Home monitoring can help

- ▶ assist your health care provider in making a diagnosis of hypertension
- ▶ tell if your blood pressure is only high when measured in your doctor's office ("white coat hypertension")
- ▶ tell if your blood pressure is only too high at home ("masked hypertension")
- ▶ assess your response to hypertension medication
- ▶ help you to remember medication and to stick to lifestyle changes.

Advice for home blood pressure monitoring

- **DO** rest for five minutes before taking a measurement.
- **DO** take a second measurement
- **DO** sit with your feet flat on the floor, back and arm supported, and arm at heart level.
- **DO** completely remove clothing from your upper arm.
- **DO NOT** smoke or drink caffeine for 30 minutes beforehand.
- **DO NOT** wear tight clothing.
- **DO NOT** talk or watch TV during the test.
- **DO NOT** measure your blood pressure when you are upset or in pain.

Buying a blood pressure monitor

Blood pressure monitors can be purchased in most pharmacies. It is very important to buy a monitor with the right size of cuff for your arm. Talk to

your health care provider to determine the right cuff size. Ask your health care provider to check your monitor after buying it and each year thereafter, to be sure it is measuring your blood pressure accurately.

Be sure to buy a blood pressure monitor that has this label



A list of approved home blood pressure measuring devices is available at:

<http://hypertension.ca/chs/deviceendorsements/devices-endorsed-by-chs/>

Keep your blood sugar and blood pressure controlled

There are several things that you can do to prevent hypertension and to keep your blood sugar and blood pressure controlled. Blood pressure increases with age and more than nine in ten Canadians will develop hypertension unless they follow a healthy lifestyle.

- GO** Be physically active for 30 to 60 minutes on most days of the week. Try walking, biking, swimming, cross-country skiing or any other physical activity that you enjoy. Remember that even a little bit of physical activity is better than no activity at all. **Keep active.**
- GO** Choose the following more often: vegetables, fruit, low-fat dairy products, whole grains and lean meat, fish and poultry. Limit fast foods, canned foods or foods that are bought prepared or those that are high in salt, sugar, saturated or trans fat.

Take control

- STOP** Eat less salt. In general, the more processed a food is, the higher the salt content. Try not to add salt to your cooking and remove the salt shaker from the table.
- STOP** If you drink alcohol, limit yourself to one or two standard drinks a day, to a weekly maximum of nine for women and 14 for men.
- STOP** If you are overweight, losing about 10 lbs (5 kg) will lower your blood pressure and blood sugar.
- STOP** Do not smoke. Smoking increases the risk of developing heart problems and other diseases. Living and working places that are smoke-free are also important. If you smoke a variety of treatments can help you stop. Stopping smoking reduces your risk of dying.



People with diabetes also have other health risks

If you have diabetes it is important to control your blood glucose. It is recommended that a blood test for glucose (hemoglobin A1c) is less than 7%; so get yours checked regularly. Most people with diabetes also have problems with fats in the blood and many need

drugs to lower cholesterol. Lower cholesterol can reduce your risk of having a stroke or heart attack. Make sure to get your cholesterol levels checked.

Medications

Many drugs that lower blood pressure also prevent heart attacks and strokes. The drugs known to prevent heart attacks and strokes include diuretics (water pills), beta blockers in those younger than sixty, angiotensin converting enzyme



inhibitors (ACE inhibitors), angiotensin receptor blockers (ARBs) and calcium channel blockers. All reduce blood pressure by the same amount on average, but some people have better results with one drug than another.

The drugs have different costs and different possible side effects. For people with diabetes or kidney disease, an ACE inhibitor or ARB is usually recommended first. Often people with diabetes or kidney disease also need diuretics. If you have heart disease a beta blocker and ACE inhibitor are commonly used. It is best to ask your health care provider what type of medication you are on if you are unsure.

Most people need three medications for blood pressure control and many will require more

Many types of blood pressure drugs work best when taken together. Most people with high blood pressure need two or more medications, together with lifestyle changes, to lower their blood pressure. Keep in mind that many drugs take up to six weeks before showing full effects. Your health care provider may change your medication to find the combination that is best for you.

For more information about blood pressure or diabetes go to:
www.hypertension.ca
www.heartandstroke.ca/bp
www.diabetes.ca



An internet-based toolbox to assist self management for home blood pressure measurement and lifestyle change can be found at www.heartandstroke.ca/bp



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Agence de la santé publique du Canada

