



GET YOUR BLOOD PRESSURE UNDER CONTROL



heartandstroke.ca

Where can I get more information about keeping my blood pressure healthy?

- Your local Heart and Stroke Foundation office
- The web site of the Heart and Stroke Foundation (heartandstroke.ca)
- Health Information Service 1-888-473-4636
- Your doctor or your nurse practitioner
- Your workplace health centre
- A public health unit
- Your local pharmacy or pharmacist
- A community health centre
- Your local library

Heart&Stroke
**Blood
Pressure**
ACTION PLAN™

For a personalized Heart&Stroke
Blood Pressure Action Plan™
visit heartandstroke.ca/bp



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CHALLENGE 1

High blood pressure should be taken seriously. True or False?

Answer: True. High blood pressure should be taken seriously by all Canadians.

Every time your heart beats, it pumps out a wave of blood. As the wave of blood travels through your body, it pushes against the walls of your arteries (the blood vessels that carry oxygen and nutrient-rich blood from your heart to the rest of your body). This creates the force known as blood pressure.

Blood pressure may vary throughout the day and change from day to day. It is generally lowest when you are resting, and may change with your activity, posture, and emotions. These temporary changes are completely normal if your blood pressure is within the healthy range.

Blood pressure statistics

- Increased blood pressure is the leading risk for death in countries like Canada.
- Five million Canadian adults have high blood pressure, representing 22% of the adult population.
- Of Canadians with high blood pressure:
 - 42% are unaware of their condition.
 - Only 16% have it treated and under control.
- 9 in 10 Canadians will develop high blood pressure or hypertension during their lives.
- One in three Canadians who have hypertension would have normal blood pressure if they consumed less sodium in their diets.
- Women with high blood pressure have a 3.5-times greater risk of developing heart disease than women with normal blood pressure.¹

¹Corrao JM et al. Coronary heart disease risk factors in women. *Cardiology* 1990;77:8-12.

Ethnicity and Blood Pressure

- Research has shown that First Nations, Inuit & Métis persons, as well as people of African heritage or South Asian descent are more likely to have high blood pressure and diabetes and are at greater risk of heart disease and stroke than the general population.

The recent Ontario blood pressure prevalence study showed that:

- Hypertension is highest among black people and lowest among East Asian people.
- Hypertension is associated with higher body mass index and visceral obesity.
- Prevalence of hypertension increases with age.
- Hypertension is more common in men than women.



CHALLENGE 2

There is only one number that reflects blood pressure. True or False?

Answer: False. A blood pressure reading is made up of two numbers, systolic and diastolic.



When your heart muscle pumps, the force of the blood against your artery walls is at its greatest. This is called the **systolic blood pressure** (pronounced "si-stall-ic"). It is the top or larger number of your blood pressure reading.

When your heart relaxes between beats, the force of the blood decreases and your blood pressure drops to its lowest point. This is called the **diastolic blood pressure** (pronounced "die-ah-stall-ic"). It

is the bottom or smaller number of your blood pressure reading. As an example, a blood pressure of 120/80 (expressed as "120 over 80") means a systolic blood pressure of 120 mm Hg (millimetres of mercury) and a diastolic blood pressure of 80 mm Hg.

What do the numbers mean?

120
—
80



Systolic

The top number occurs when your heart beats and pumps blood.



Diastolic

The bottom number occurs when your heart relaxes and fills with blood.

Blood Pressure Ranges	
Category	Systolic/Diastolic
Normal	$\frac{120-129}{80-84}$
High-Normal	$\frac{130-139}{85-89}$
High Blood Pressure (Hypertension)	$\frac{140}{90}$ or higher
High Blood Pressure in diabetics or people with kidney disease	$\frac{130}{80}$ or higher
High Blood Pressure with self/home monitoring	$\frac{135}{85}$ or higher

A systolic blood pressure that goes up and stays up above 140 mm Hg on several occasions and/or a diastolic blood pressure that is higher than 90 mm Hg is called high blood pressure, or hypertension. If you have diabetes or kidney problems, your blood pressure should usually be below 130/80. In most cases, the exact cause of high blood pressure is not clear. Lack of physical activity and poor diet are usually the major contributors. High blood pressure that has no clear cause is called **essential hypertension**.

One high reading does not necessarily mean you have high blood pressure. If you have one high reading, you should have it measured at least two more times on separate days to check whether it is consistently high.

Keep a record of your blood pressure readings (see page 22 for a record sheet). This record will help you and your doctor determine whether your blood pressure is within a healthy range. Whether your high blood pressure will be treated, and how it is treated, will depend upon many factors.

CHALLENGE 3

High blood pressure can affect parts of the body other than the heart and brain. True or False?

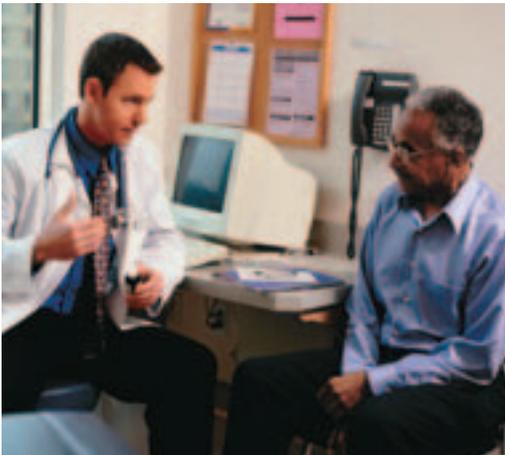
Answer: True. High blood pressure can cause damage to the blood vessels anywhere in your body.

High blood pressure can damage the lining of arteries anywhere in the body. If untreated, it can lead to atherosclerosis (pronounced "a-ther-oh-skler-oh-sis"), often called **narrowing of the arteries**.

Atherosclerosis narrows and stiffens the arteries, reducing the amount of blood flow.

Atherosclerosis can result in conditions such as:

- Stroke
- Heart attack
- Heart failure
- Kidney failure
- Peripheral vascular disease (PVD)
- Impotence
- Retinal/Eye damage



To reduce your chance of developing these problems, you should:

- Have your blood pressure checked more frequently if you have risk factors for high blood pressure or as recommended by your healthcare provider.
- Keep your blood pressure within a normal range by making healthy choices and following your doctor's recommendations.

CHALLENGE 4

There are some risk factors for high blood pressure that I cannot do anything about and others that I can. True or False?

Answer: True. A risk factor increases your chance of developing a particular medical problem such as high blood pressure. Some of the risk factors for high blood pressure are things that you cannot do anything about, such as:

- **Age** (about half of people over the age of 65 have high blood pressure)
- **Family history** of high blood pressure
- **Ethnicity** (high blood pressure is more common among people who are of African, South Asian or First Nations/Inuit or Métis heritage.)

You can't change these risk factors. But if you have one of these risk factors, you can make healthy lifestyle changes that can reduce your risk.

For more information, tips, tools and resources on any of the above topics, visit heartandstroke.ca or call 1-888-473-4636.



CHALLENGE 5

There are a lot of things I can do to keep my blood pressure in a healthy range. True or False?

Answer: True. There are lots of things you can do to keep your blood pressure in a healthy range. Start by getting a personalized Blood Pressure Action Plan™ by visiting heartandstroke.ca/bp

There are many healthy choices you can make to keep your blood pressure healthy.

- Make sure you have your blood pressure checked at least once every two years, or more often if recommended by your healthcare provider.
- Maintain a healthy body weight. If you are overweight, losing even a modest amount of weight can help to reduce your blood pressure.
- Eat a healthy, balanced, reduced-fat diet.
- Reduce the amount of salt in your diet by lowering your consumption of foods with added salt (e.g. Many types of convenience and snack foods and smoked, salted, cured or canned meats and fish). Also try to limit your use of salt in cooking and at the table.
 - Check with your healthcare professional to see if you should eat foods rich in potassium (e.g., bananas, cantaloupes, grapefruits, oranges, tomato or prune juice, melons, prunes, molasses and potatoes).





- Participate in regular physical activity. Check with your doctor first if you haven't been active for a while.
- Be smoke-free.
- Limit alcohol intake to no more than one to two drinks a day, to a weekly maximum of 14 drinks for men and 9 drinks for women.*
- Find healthy ways to manage your stress. Too much stress may increase your blood pressure, but research suggests that the ways you *manage* your stress are actually more important. Avoid unhealthy stress busters (e.g., smoking, alcohol use, poor food choices) and find relief instead with exercise, socializing, laughter, and healthy eating. And don't forget to take time out for yourself!

* Guidelines do not apply if you have liver disease, mental illness, are taking certain medication, or have a personal or family history of alcohol abuse, are pregnant, trying to get pregnant or breastfeeding. If you are concerned about how drinking may affect your health, check with your healthcare professional.



CHALLENGE 6

I should stop taking my blood pressure medication if I experience side effects such as headache or dizziness. True or False?

Answer: False. Always take your blood pressure medication as directed by your doctor. The benefits of using the medication far outweigh the risk of side effects.

If your doctor has prescribed medication for you, you should always take it as directed. **Not following the doctor's advice is the single most common reason why blood pressure treatment programs fail.** The medication will not be effective if you don't take it as directed. In some cases, stopping a blood pressure medication can cause your blood pressure to rise sharply.

If you are experiencing some side effects, speak to your healthcare professional or pharmacist. The side effects may not be related to your medication, or you may need a different dosage, or even a different medication. Never stop taking medication on your own.



If you have trouble remembering to take pills, establish a routine.

- Take your medications at the same time every day.
- Consider setting a separate alarm clock to remind you that it is time to take your medication.
- Talk to your pharmacist about packaging options for your medications. Most medications can be put into pill containers marked with dates and times. Dial-Vial medication containers or bubble packaging are other ways to help you remember to take your medications.
- Use visual reminders, such as keeping your pills on the kitchen counter, or putting a sticker on your bathroom mirror.
- Mark your calendar with the date your prescription runs out, and fill your prescription before that date. In addition, count your tablets on the date the prescription should run out. If you have tablets left, you have forgotten to take some of the pills and need to try different methods to help you remember when to take them.
- Keep an up-to-date record of all your medications with you at all times. This is very important if you have a medical emergency, see a new healthcare professional or travel. When you travel, take along extra medications in case of delays, and be sure to keep your medications in your carry-on baggage.
- Use the Weekly Medication Chart on page 23 of this booklet to help you take your medications as instructed.





Types of blood pressure medications.

A number of different drugs can help to control blood pressure (referred to by healthcare professionals as antihypertensives).

Angiotensin II Receptor Blockers (ARBs)

ARBs are a family of drugs that relax blood vessels by blocking a chemical (angiotensin II) that causes blood vessels to narrow, constrict or tighten. This action allows blood to flow more easily through the body and thus, helps to lower blood pressure.

Angiotensin Converting Enzyme (ACE) Inhibitors

ACE inhibitors are a family of drugs that relax blood vessels by reducing the production of an enzyme required to produce a chemical (angiotensin II) that causes blood vessels to narrow, constrict or tighten. This action allows blood to flow more easily through the body and thus, helps to lower blood pressure.

Beta Blockers

Beta Blockers are a family of drugs that slow down the rate of the heart, the pumping force of the heart and the amount of blood pumped by the heart per minute. These actions help to lower blood pressure.

Diuretics

Diuretics are a family of drugs commonly referred to as “water pills” that increase the kidneys’ excretion of sodium or salt, which in turn reduces the volume of blood and helps to lower blood pressure.

Calcium Channel Blockers or Antagonists

Calcium Channel Blockers are a family of drugs that block the passage of calcium into muscles that control the size of blood vessels. This action dilates or opens up the blood vessels and thus helps to lower blood pressure.

Direct Renin Inhibitors

Direct renin inhibitors lower blood pressure to a similar extent as other antihypertensive drugs, but studies showing the effectiveness of the drug in preventing heart disease and strokes have not been completed yet.

Aliskiren, the first orally active direct renin inhibitor works by suppressing the entire renin-angiotensin-aldosterone system (RAAS) by targeting the system at its point of activation, resulting in 24-hour blood pressure control.

For more information on these medications, please consult with your doctor or pharmacist or visit heartandstroke.ca/bp.



Public blood pressure machines

Many public places such as drug stores now have blood pressure measurement machines. Many of these machines are calibrated regularly and should be accurate. However, there are a few points you should remember when using these machines:

- Such machines should not be used as a substitute for having your blood pressure checked regularly by a healthcare professional.
- These machines cannot tell you what your blood pressure reading means or what you should do next. For this, you will need to talk to your doctor.
- “One size fits all” machines may not work well for children or people with arms that are either smaller or larger than normal.

To get an accurate reading, you have to:

- Sit quietly for at least 5 minutes before and during taking your blood pressure, with your feet flat on the floor and back rested against the back of the chair.
- Avoid eating, smoking, doing heavy physical exercise or drinking tea or coffee for at least 2 hours before taking your blood pressure.
- Place your arm on a table or a firm surface with the cuff at heart level.
- See page 21 for more important tips. If your blood pressure is above 135/85 for several readings taken 3 to 5 minutes apart, contact your family doctor for further testing and evaluation.

CHALLENGE 7

Blood pressure should be checked every four years. True or False?

Answer: False. You should have your blood pressure checked every two years or more frequently if required.

It is recommended that healthy people with normal blood pressure have their blood pressure checked at least every two years. Your blood pressure may need to be checked more often if you have high blood pressure, or other conditions that can affect blood circulation. Set up a schedule with your healthcare provider to have your blood pressure checked as needed.

You can have your blood pressure checked at:

- Your doctor's office
- A public health unit
- A community health centre
- A walk-in medical clinic
- A blood pressure screening clinic
- Your workplace health centre
- A certified fitness testing centre
- A drug store
- Your home (using a self-monitoring home blood pressure kit)

24-Hour Ambulatory Blood Pressure Monitoring

An automated 24-hour blood pressure monitor records multiple blood pressure readings throughout an entire day, while you are involved in normal activities. 24-hour ambulatory blood pressure monitoring is often used to diagnose so-called "white coat hypertension." (White coat hypertension is used to describe a person who has high blood pressure readings at the doctor's office, but does not have high blood pressure most other times.) If the 24-hour monitor shows that your blood pressure is usually within a normal range, the doctor will often recommend against starting medications to lower blood pressure.

Commonly asked questions about blood pressure.

1. Can I tell if my blood pressure is high by the way I feel?

High blood pressure is often referred to as the “silent killer” because there are usually no symptoms. High blood pressure can double or even triple your risk of heart disease and stroke and increase your risk of kidney disease. It can also cause damage to the blood vessels in the eyes (retinopathy) or the legs or other parts of the body (peripheral vascular disease).

The only way to find out if you have high blood pressure is to get your blood pressure checked by your doctor or another qualified healthcare provider. Know your blood pressure and discuss with your healthcare provider how often you should have it checked.

2. Does one high blood pressure reading mean that I have high blood pressure?

One high blood pressure reading is not enough to determine that you have high blood pressure. A doctor will diagnose high blood pressure only after several readings taken over a period of time.

3. Does the term “hypertension” mean that a person is hyperactive or tense?

Hypertension is the medical term for high blood pressure. Blood pressure is not necessarily any higher in anxious, overactive people than it is in easy-going, relaxed people.

4. Is high blood pressure the only risk factor for heart attack and stroke?

High blood pressure, or hypertension, is one of the risk factors of heart attack and stroke you can do something about. Other risk factors you can do something about are being smoke-free, reducing your cholesterol levels, eating healthy and getting active.



5. Does stroke occur only in people with high blood pressure?

Although strokes can occur in people with normal blood pressure as well as those with high blood pressure, high blood pressure is the most common risk factor for stroke. Controlling high blood pressure can reduce the risk of stroke for people of all ages.

6. Is a lower than average blood pressure unhealthy?

A low blood pressure is normal for some people. As long as there are no symptoms of light-headedness, constant fatigue, or fainting, low blood pressure can be normal and healthy.

7. Can giving blood cause low blood pressure?

Blood pressure may fall slightly after giving blood, but it quickly returns to your previous level.

8. If my doctor prescribes medicine to reduce my blood pressure, will I always have to take it?

It is very possible that you will. However, be sure to check with your doctor at regular intervals so that the type and dosage of the drugs can be adjusted to your needs. When your prescription is finished never assume that you do not need to continue your pills even if your blood pressure has been within normal range. Always check with your doctor for any necessary refills of your medication. Your doctor will also want to follow your progress.

Another important thing to keep in mind is that high blood pressure is a life-long condition that needs to continue to be monitored and cared for. It isn't something you cure, but it is something you can control and manage.

If you experience any side effects due to your medication, notify your doctor so an alternative can be prescribed.

9. How can I check my own blood pressure?

Many community centres and pharmacies have programs or machines where you can have it checked. If your blood pressure is over 135/85 for several readings, make an appointment to see your doctor.

Your doctor may ask you to check your blood pressure regularly with a home blood pressure monitor. They cost about \$100 and are easy to use. Check your monitor for accuracy against the monitor in your doctor's office. Make sure the blood pressure cuff is the right size for your upper arm. Always sit down in a comfortable chair for 5 minutes before taking your blood pressure and take repeat measurements at least 3 to 5 minutes apart.



Canadian Hypertension Society (www.hypertension.ca).

Look for this logo or ask a healthcare provider to help you choose the right home blood pressure monitor.

10. If I am being treated, how low should my blood pressure be?

If you are taking medications and/or making lifestyle changes, your blood pressure in the doctor's office should usually be below 140 systolic and 90 diastolic. If you have diabetes or kidney problems the blood pressure should usually be below 130 systolic and 80 diastolic. If you measure blood pressure at home, the readings may be 5 systolic and 5 diastolic lower than in the doctor's office. For some people with specific health conditions, doctors will choose a different target level for blood pressure. Be sure to talk to your doctor about the best level for you.

11. How does caffeine affect my blood pressure?

Caffeine affects your body in many different ways, but whether it causes high blood pressure is still being researched. Studies have shown that the caffeine in coffee, tea, some soft drinks and chocolate may cause blood pressure to go up, but only temporarily. In a short time blood pressure returns to its previous level. Talk to a healthcare professional about whether you should limit caffeine.

12. How should I prepare to have my blood pressure checked?

- Do not eat in the half hour before your blood pressure is taken.
- Avoid smoking and/or drinking tea or coffee; these may temporarily raise your blood pressure.
- You should refrain from drinking alcohol for 8 hours prior to testing.
- Try not to do any heavy physical exercise at least 2 hours before your appointment. Heavy exercise will raise your blood pressure temporarily.
- Empty your bladder and bowel before your appointment. An overly full bladder affects blood pressure.
- Let the person taking the blood pressure know if you are feeling ill, stressed, anxious or rushed at the time of your appointment.
- Tell your healthcare provider if you take medication, or are taking any over-the counter medications such as cough or cold pills, or if you use a nicotine patch or gum.
- Wear loose, non-restrictive clothing. The arm used for measurement should be bare and supported at heart level.
- Relax and sit quietly with your feet on the floor and with your back against a firm surface for at least 5 minutes before the measurement.
- If you are unsure about your reading, don't hesitate to have it checked again. Sit quietly for a few minutes and have your blood pressure taken again.





For a personalized Heart&Stroke Blood Pressure Action Plan™ designed especially for you, visit **heartandstroke.ca/bp** or call 1-888-HSF-INFO (1-888-473-4636).

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