Blood Pressure FAQs

What is Blood Pressure?

Blood pressure is the force of blood being pushed against the walls of blood vessels in the circulatory system. High blood pressure means that there is too much pressure in these vessels.

Over time, high blood pressure (referred to as Hypertension) can damage blood vessel walls and promote the buildup of fatty plaque. This buildup can narrow and eventually block arteries, straining and weakening your heart. About 25% of Canadians have high blood pressure. As we age our blood vessels narrow and harden. ""Atherosclerosis"" is a common condition in which plaque, made up of cholesterol, fatty substances, calcium, fibrim- a muscle clotting protein, and cellular waste builds up on the inner walls of the arteries. This build up can narrow and eventually block arteries, straining and weakening your heart.

What do your Numbers Mean?

Blood pressures is the pressure in your blood vessels while blood circulates throughout your body. High blood pressure or “Hypertension” is the pressure at which one’s normal average blood pressure is considered too high and other health risks including: heart attack, stroke, dementia, kidney failure, heart disease and erectile dysfunction may occur. It is expressed as two numbers: systolic/diastolic 120 mmHg/80 mmHg (mmHg = millimeters of mercury). “Systolic” numbers refer to the pressure on the walls of your arteries while the heart is contracting and pushing blood. “Diastolic” pressure is the lower number when the heart is at rest and relaxed. A simple way to understand this is to picture a garden hose. When the tap is turned on, the immediate pressure on the walls of the hose is the “systolic” value, and when the tap is turned off it is the “diastolic” number.

There are many different causes of high blood pressure. We differentiate between common primary (essential) hypertension, and secondary hypertension. The latter group can be ascribed to specific organic malfunctions. Please consult your doctor for information about the possible origins of your own increased blood pressure values.

Normal Blood Pressure Values

When rested, and measuring your blood pressure at home, measurements with diastolic pressure readings above 80 mmHg or systolic readings over 130 mmHg are considered high. If you obtain consistent readings in this range, consult your doctor immediately. High blood pressure values over time can damage blood vessels, vital organs such as the kidney, and your heart. With blood pressure values that are too low (i.e., systolic values under 105 mmHg or diastolic values under 60 mmHg), consult with your doctor.

Systolic	Diastolic	Comment
Below 120	Less than 80	This range is considered **"Normal"** and ideal.
120 - 129	70 - 79	This range is considered **"Elevated"** or **"Pre-hypertension"**. Discuss with your health care professional. Lifestyle modifications maybe required to avoid advancing into hypertension.
130 - 139	80 - 89	This is in the **"hypertension"** range. Discuss with your health care professional. Medication(s) and lifestyle modifications are typical treatments.
140 and higher	90 +	Discuss with your medical professional, medication(s) and lifestyle modifications are necessary to control your hypertension

Adapted to include new information as outlined in Hypertension Canada's 2025 Understanding and Measuring your Blood Pressure guideline.

Note: A diagnosis of high blood pressure must be confirmed with a medical professional. A doctor should evaluate any unusual blood pressure readings. Additionally, lower targets may be appropriate for some populations such as African-Americans, the elderly, or patients with underlying issues such as diabetes mellitus or chronic kidney disease.

Important for Canadians:
* Hypertension measured at home ≥ 130/80

What causes Hypertension?

In addition to genetics, Hypertension can be caused by many controllable factors including obesity, lack of physical activity, salt intake, alcohol intake, and stress. As we age we become increasingly vulnerable to high blood pressure. High blood pressure can lead to heart disease, stroke, dementia, and kidney disease.

Can it be prevented or controlled?

By closely monitoring your blood pressure and making a few lifestyle changes your high blood pressure can be controlled.

Comparing Readings to Other Blood Pressure Devices

Many questions arise when two blood pressure devices are compared in an effort to check accuracy. An accurate comparison requires repeatable measurements under the same conditions to "reference device" with known accuracy. Significant time is required to reduce naturally occurring blood pressure variability during the test. The subject should be seated comfortably with feet flat on the floor, and have rested for 5 minutes before the first reading to allow blood pressure levels to stabilize.

The patients back, elbow and forearm should be supported, and the middle of the cuff should be at the level of the right atrium. There should be no talking or moving during the measurement, and if comparing to an aneroid gauge or mercury column, observers should avoid parallax and be careful not to round measurements.

The most accurate way to compare devices is to take two readings at the same time. However, most people and doctor's offices do not have the equipment necessary to measure blood pressure from two devices simultaneously. To take sequential measurements properly requires a pair of initial

measurements to determine the subjects blood pressure level: first with the reference equipment, followed by 60 seconds, then with the monitor-under-test. The actual accuracy test requires three pairs of measurements with 60 seconds between measurements. These measurements are averaged and a comparison can be made. Since most people tend to relax and their blood pressure falls with subsequent measurements, following this protocol reduces these natural changes in Blood Pressure levels. The standard technical error of both consumer and professional devices is normally ±3 mmHg, so a discrepancy of 6 mmHg is acceptable even when the devices are working within their specifications.

Any comparisons without a known “reference device” and not following the procedures described above will yield unreliable results. In addition, to do an accuracy test properly the reference device must also be tested to a known reference to confirm its accuracy, prior to being used as the reference for comparisons.

Cardiovascular exercise like walking, running, and cycling can help lower your blood pressure. Sports are a great way to reduce stress and get cardiovascular exercise. Start with 20 minutes a day and work yourself up. Make sure to check with your doctor before beginning any exercise program.

Diet is a key component in maintaining healthy blood pressure. Avoiding processed foods is a good first step to reduce your sodium and saturated fat intake. Try incorporating some heart healthy foods into your diet including dark berries, leafy greens, lean meats, and beans

Home monitoring is a crucial step on your path to healthy blood pressure levels. Experts have found that frequent measurements at home provide a more accurate understanding of a person’s average blood pressure than measurements taken at the doctor’s office. Tracking and reviewing home readings with your doctor is a great way to monitor your progress.

What Influences Blood Pressure?

Blood pressure is much like glucose levels or pulse in the respect that it can (and will) vary depending on both internal and external factors, all day long. This is why it is very common to have variation in your readings. This is also why it is important to average your readings across the day to establish an average.

Here are some of the factors that can influence a blood pressure reading:

BP Medication	Other Medication
Eating	Caffeine
Alcohol	Smoking
Recent physical activity	Urge to go to the bathroom
Time of Day	Asleep or awake
Hormones	Mental stress or emotions
Apprehension or tension	Not resting adequately before measurement
Pain	Hot tubs, baths or showers
Moving or talking during assessment	Environment – temperature

Cuff Sizing is Important for Accuracy

Always follow manufacturers instructions. Both sides of the cuff Velcro should be in full contact with each other, and your cuff should always be on your non-dominant arm, unless your blood pressure is consistently higher on your dominant arm. In that case always measure on the side with higher readings. **An undersized cuff will overestimate BP values.**

General home monitoring recommendations

Always consider time of day (use time & date in memory function) and follow proper technique. When interpreting data, consider possible influences (meals and drinks, physical activity, emotional state)

Blood Pressure Monitor Instruction Manuals

Finding your Blood Pressure Monitor model number: The model number for your specific blood pressure machine is located on the silver ratings sticker on the back of your unit.

7 Day Log Chart: Download **Free Log Book:** Download

Instruction Manuals:

BIOS Diagnostics 33603 Blood Pressure Monitor: Download

BIOS Diagnostics 3AL1-3E Blood Pressure Monitor: Download

BIOS Diagnostics 3AG1 Blood Pressure Monitor: Download

BIOS Diagnostics 3MS1-4K AFIB Blood Pressure Monitor: Download

BIOS Diagnostics 3MS1-4Y AFIB Blood Pressure Monitor: Download

BIOS Diagnostics A130 Premium Blood Pressure Monitor: Download

BIOS Diagnostics A6PC Blood Pressure Monitor: Download

BIOS Diagnostics A90 Compact Blood Pressure Monitor: Download

BIOS Diagnostics ABP-01 Ambulatory Blood Pressure Machine: Download

BIOS Diagnostics BD201 Easy Read Blood Pressure Monitor: Download

BIOS Diagnostics BD204 Compact Blood Pressure Monitor: Download

BIOS Diagnostics BD209 Blood Pressure Monitor: Download

BIOS Diagnostics BD215 Premium Blood Pressure Monitor: Download

BIOS Diagnostics BD216 Compact Blood Pressure Monitor: Download

BIOS Diagnostics BD230 Automatic Blood Pressure Monitor: Download

BIOS Diagnostics BD240 (2019) Protocol 7D Blood Pressure Monitor: Download

BIOS Diagnostics BD240 (2018) Protocol 7D Blood Pressure Monitor: Download

BIOS Diagnostics BD240 (2025) Protocol 7D Blood Pressure Monitor: Download

BIOS Diagnostics BD245 Protocol 7D MII Blood Pressure Monitor: Download

BIOS Diagnostics BD250 Protocol 7D MII Blood Pressure Monitor: Download

BIOS Diagnostics BD252 Protocol 7D MII Blood Pressure Monitor: Download

BIOS Diagnostics BD270 Professional Blood Pressure Monitor: Download

BIOS Diagnostics BD350 AFIB Blood Pressure Monitor: Download

BIOS Diagnostics BD351 Easy Read Blood Pressure Monitor Download

BIOS Diagnostics BD352 Protocol 7D MII Blood Pressure Monitor: Download

BIOS Diagnostics BD353 Protocol 7D MII Blood Pressure Monitor: Download

BIOS Diagnostics BD401 Blood Pressure Monitor: Download

BIOS Diagnostics BD850 Blood Pressure Monitor: Download

BIOS Diagnostics W100 Wrist Blood Pressure Monitor: Download