



UNIVERSITY OF OTTAWA  
HEART INSTITUTE  
INSTITUT DE CARDIOLOGIE  
DE L'UNIVERSITÉ D'OTTAWA

# Hypertension



A GUIDE FOR PATIENTS AND CAREGIVERS

# About this guide

You are the most important member of your healthcare team. We are here to support you. You have the power to improve your blood pressure and achieve your lifestyle management and risk reduction goals.

This guide will help you to better understand your blood pressure, the risk factors associated with it, and how to improve your lifestyle.

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This document is also available in French under the title: | *Cette publication est aussi disponible en français sous le titre : Hypertension*

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# Understanding hypertension

## What is hypertension?

Hypertension is diagnosed when your blood pressure is consistently high. The World Health Organization estimates that globally, 1.28 billion adults between the ages of 30 and 79 have hypertension. Around 46% of adults who have hypertension are unaware of their condition, and only 42% are diagnosed and treated.

Blood pressure is one of the vital signs that indicate your overall health. Your blood pressure is the force of your blood pushing against the walls of your blood vessels. An increase in blood pressure can eventually cause damage to the walls of the arteries. If untreated, high blood pressure can lead to many problems throughout the body, particularly in the heart, brain, and kidneys.

Because your blood pressure normally changes during the day, your doctor will probably take several blood pressure measurements at separate appointments before diagnosing you with hypertension.

## What is white coat syndrome?

White coat syndrome is when your blood pressure measurement is higher than your usual home blood pressure readings when you are with a doctor or a healthcare provider. It is an inaccurate representation of your blood pressure.

## What is masked hypertension?

Masked hypertension is when your blood pressure measurement is normal with a doctor or a nurse but high at other times. It is important to ensure the accuracy of your home blood pressure machine and your measurement techniques, as these can affect your readings. To confirm this, you can bring your home blood pressure cuff to an appointment with a healthcare provider who can compare with their machine.

## What is essential hypertension?

When there is no other medical condition causing high blood pressure, it is called essential hypertension. It usually develops gradually over the years. Most people with essential hypertension develop high blood pressure between the ages of 30 and 70.

## What is gestational hypertension?

Two blood pressure readings of at least 140 mmhg (systolic) or 90 mmhg (diastolic) after 20 weeks of pregnancy is indicative of gestational hypertension. Pre-eclampsia, HELLP syndrome and eclampsia are also related to high blood pressure in pregnancy. These conditions, known as hypertensive disorders of pregnancy, cause a higher risk of heart disease, hypertension and stroke. For more information, download our Guide to Women's Heart Health ([ottawaheart.ca/media/18822](http://ottawaheart.ca/media/18822)).

## What is secondary hypertension?

When the high blood pressure is caused by another medical condition, it is called secondary hypertension. It tends to happen suddenly and can be more severe and difficult to control. Some of the causes include:

- Obstructive sleep apnea
- Kidney disease
- Adrenal gland problems
- Thyroid problems
- Certain birth defects in blood vessels
- Certain medications and recreational drugs

## What are the symptoms of hypertension?

High blood pressure does not usually cause symptoms. Many people with high blood pressure are not aware they have the condition. If the high blood pressure is severe, you may have symptoms that include:

- Severe headache (but most headaches are not related to blood pressure)
- Nausea and vomiting
- Vision problems
- Symptoms of a stroke, mini-stroke, or heart attack

## What are the risk factors for hypertension?

Risk factors are characteristics or behaviours that affect your health.

There are some risk factors you cannot control, such as your family history, age, and sex. High blood pressure is more common in men before age 50 and in women after age 50. Some risk factors you can control, such as smoking, alcohol intake, lack of exercise, increased weight, and unhealthy diet (especially the amount of salt in your diet).

## How should you measure your blood pressure?

You should measure your blood pressure on the upper arm using a blood pressure machine with an inflatable cuff that is appropriate for the size of your arm. It is important to sit comfortably with your back supported and your legs uncrossed.

Blood pressure readings have two numbers (for example, 120/80 mmHg). The top (or first) number is your systolic pressure reading, the pressure in your arteries when your heart beats. The bottom number is your diastolic pressure reading, the pressure in your arteries between beats. The mmHg is a standard measurement of blood pressure referring to millimetres of mercury. This video explains how to measure your blood pressure with a home monitor: [youtube.com/watch?v=N2GZCfJ5IK8](https://www.youtube.com/watch?v=N2GZCfJ5IK8).





## How often and when should you measure your blood pressure?

Measure your blood pressure:

- One to three times per week
- Three times in a row
- Two to three hours after taking your blood pressure medication
- At least two hours after a meal
- After emptying your bladder and bowels
- At least one hour after drinking coffee or smoking
- At least thirty minutes after exercise
- Always after resting five minutes, without talking

## Other tests the doctor may recommend

If you have hypertension, your doctor will discuss a plan of action for your treatment. Appointments may be made for possible diagnostic tests to assess your heart and/or kidneys, and a follow-up appointment is usually booked.

Common tests that may be ordered based on your medical history and symptoms (but are not always necessary) include:

- Blood tests to measure your electrolytes, blood glucose, lipids, and kidney function
- A urinalysis to detect blood, glucose, or protein in your urine
- An electrocardiogram (ECG)
- An echocardiogram (ultrasound of the heart) to check for evidence of thickened heart walls or rhythm abnormalities
- Abdominal CT scan or magnetic resonance imaging (MRI) of the kidney arteries
- 24-hour ambulatory blood pressure monitoring, which automatically reads your blood pressure every 20 minutes to better assess changes throughout the day and night, and assess the control of your blood pressure



## What should your target blood pressure be?

Remember, only your healthcare professional can tell you what your target blood pressure should be. The target depends on factors like age and health conditions and the location where the blood pressure is taken.

For most people, their target blood pressure is less than 140/90 mmHg, but if you measure your blood pressure at home, your target is less than 135/85 mmHg. If you have diabetes, your target is less than 130/80 mmHg. For people with established cardiovascular disease, such as a history of heart attack or stroke, we often aim for a lower target of 120/80 mmHg or less.

If you have diabetes, kidney disease, or other health conditions, speak to your healthcare professional about your blood pressure readings and the treatment that is right for you.

## Recommended blood pressure machine

If you wish to purchase a home blood pressure machine, we recommend obtaining one of the machines approved by Hypertension Canada. We recommend you buy a model with an arm cuff. It is important to note the size of the cuff in relation to the circumference of your arm.

Learn more about blood pressure machines on Hypertension Canada's website: [hypertension.ca](http://hypertension.ca).





# What can you do to improve your blood pressure?

## Know your risk factors

Choosing healthy lifestyle habits can lower blood pressure and the risk of developing high blood pressure. Know and control your risk factors for cardiovascular disease: [youtube.com/watch?v=7HhCl6YWKa8](https://www.youtube.com/watch?v=7HhCl6YWKa8).

## Eat healthy

- Reduce your daily salt/sodium consumption to less than 2,000 mg per day. One teaspoon of salt is equal to 2,300 mg of sodium, which is more than your daily limit.
- Eat healthy to maintain healthy blood pressure. Follow our *Top 10 Tips for Healthy Eating*: [ottawaheart.ca/document/top-10-tips-healthy-eating](https://ottawaheart.ca/document/top-10-tips-healthy-eating).
- Watch our educational videos to help you get started: [ottawaheart.ca/healthy-eating](https://ottawaheart.ca/healthy-eating).

If you are struggling to make healthier dietary choices, ask your doctor or nurse practitioner for a referral to a registered dietitian or to a nutrition workshop.

## Exercise

Be physically active for 30-60 minutes four to seven days each week. This should be moderate-intensity exercise such as walking, jogging, cycling, or swimming. High-intensity exercises are not more effective. Watch our educational video to help you get started: [youtube.com/watch?v=QBRuAD9\\_gc](https://www.youtube.com/watch?v=QBRuAD9_gc).

## Quit smoking

Refrain from smoking cigarettes or e-cigarettes. If you have not already been referred to the smoking cessation program, we have specialists at the UOHI who can help you cut down or quit. Please ask us if we can help you with this.

## Avoid alcohol or drink less

Limit your alcohol consumption. We recommend that heart patients do not drink alcohol. If you do drink, it is important to understand ways to reduce the risk of long-term impacts to your heart and overall health. Low-risk guidelines recommend no more than one to two standard drinks per week. If you drink more than two drinks per week, you are increasing your risk of certain cancers, heart disease, and stroke.

## **Reduce stress**

Paying attention to your emotional health can help you manage stress and emotions. Watch our *Mind the Heart* video ([youtube.com/watch?v=rAPLzM8wumg](https://www.youtube.com/watch?v=rAPLzM8wumg)) and follow our *10 Tips for Emotional Health* ([ottawaheart.ca/document/10-tips-emotional-health](https://ottawaheart.ca/document/10-tips-emotional-health)).

## **Take your medications**

Take your medication(s) as prescribed. If you are unsure about any of your blood pressure medications, ask your healthcare provider before making major changes on your own.

## **Follow up with your healthcare team**

Always attend appointments with your healthcare provider. Let your healthcare provider know of any changes in your blood pressure readings or any symptoms you may have.

## When is high blood pressure an emergency?

If your blood pressure is higher than 180/120 mmHg **without symptoms**, you should call your healthcare provider as soon as possible.

**You should immediately call 911 and go to your nearest emergency department if you're experiencing:**

- Chest pain
- Shortness of breath
- Blurred vision
- Altered mental status
- Severe headache with a blood pressure higher than 180/120 mmHg



**If you have signs of a stroke or heart attack, call 911.**

