CONDITION

# Hypertension

Hypertension is persistently high blood pressure that can gradually damage the heart, blood vessels, brain, kidneys, and eyes.

**WHAT IT IS**
Persistently raised pressure inside the arteries

**BODY SYSTEM**
Heart and circulation

**MAIN SYMPTOMS**
No symptoms, headache, blurred vision, shortness of breath

**WHAT CAUSES IT**
Usually genetic, age-related, health, and lifestyle factors

**HOW IT IS DIAGNOSED**
Repeated office, home, or ambulatory blood pressure readings

**MAIN TREATMENT**
Lifestyle changes and blood pressure-lowering medicines

**CAN IT BE CURED?**
No - usually controlled rather than cured

**IS IT AN EMERGENCY?**
Sometimes - very high readings with organ-damage symptoms

**LONG-TERM OUTLOOK**
Often manageable; poor control raises serious health risks

## Overview

Hypertension means that the pressure of blood inside your arteries stays higher than is healthy. It is often called high blood pressure.

A blood pressure reading has two numbers. The top number, called systolic pressure, is the pressure when your heart contracts. The bottom number, called diastolic pressure, is the pressure while your heart relaxes. Readings are measured in millimetres of mercury, written as mm Hg.

Blood pressure changes throughout the day. Exercise, pain, stress, caffeine, and illness can temporarily raise it. One high reading does not usually confirm hypertension. Diagnosis normally requires repeated readings, often including measurements taken at home or with a portable monitor.

Definitions differ slightly among countries and medical guidelines. In the United States, readings that repeatedly reach 130/80 mm Hg or higher may be classified as hypertension. Some healthcare systems use 140/90 mm Hg in a clinic, with lower thresholds for home readings. Your overall health and how the pressure was measured also matter.

Hypertension matters because long-term pressure can damage blood vessels and organs without causing obvious symptoms. Controlling it lowers the risk of stroke, heart disease, kidney damage, and other complications.

## Symptoms

Hypertension usually causes no symptoms. You may feel well even when your readings are consistently high. This is why blood pressure measurement is more useful than trying to judge it by how you feel.

Headaches, dizziness, nosebleeds, or feeling flushed are often blamed on high blood pressure, but they are not reliable signs. These symptoms have many possible causes and may occur when blood pressure is normal.

Very high blood pressure can sometimes occur with symptoms of acute organ damage. These may include:

This combination may be a hypertensive emergency and needs immediate medical assessment.

- Chest pain or severe shortness of breath
- Sudden weakness, numbness, confusion, or difficulty speaking
- A sudden severe headache, seizure, or loss of consciousness
- New vision loss or a major change in vision
- Severe back or abdominal pain

## Causes and risk factors

Most people have primary hypertension . This develops gradually through a combination of inherited traits, ageing, health conditions, and environmental or lifestyle factors. There is no single identifiable cause.

Factors linked with a higher chance of developing hypertension include older age, a family history of high blood pressure, excess body weight, limited physical activity, high sodium

intake, heavy alcohol use, and long-term poor sleep. Social conditions, chronic stress, and reduced access to healthy food or healthcare can also affect risk.

Certain health conditions can contribute. These include diabetes, chronic kidney disease, and obstructive sleep apnoea, in which breathing repeatedly stops or becomes shallow during sleep.

Secondary hypertension has a specific underlying cause. Possible causes include kidney disease, narrowing of an artery supplying a kidney, adrenal or thyroid disorders, and some congenital blood vessel conditions. It is more likely to be considered when hypertension begins suddenly, appears at a young age, becomes difficult to control, or is unusually severe.

Some medicines and substances can raise blood pressure. Examples include certain anti-inflammatory pain medicines, decongestants, stimulants like methylphenidate or lisdexamfetamine , corticosteroids like prednisone or hydrocortisone , some hormonal medicines, liquorice products, cocaine, and amphetamines. Do not stop prescribed medicine without medical advice.

Pregnancy can also cause new hypertension or make existing hypertension more difficult to manage. High blood pressure during pregnancy needs specific monitoring because it can affect both the pregnant person and the baby.

## Diagnosis

Blood pressure is measured using an inflatable cuff around the upper arm. Correct cuff size and body position are important. Talking, crossing your legs, exercising just beforehand, or having a full bladder can affect the result.

A diagnosis is usually based on the average of several properly taken readings rather than one measurement. You may be asked to use one of the following:

Home or ambulatory monitoring can identify white-coat hypertension , where clinic readings are high but readings elsewhere are not. It can also identify masked hypertension , where clinic readings look acceptable but home readings are high.

After hypertension is confirmed, tests may look for organ effects, related conditions, or a secondary cause. These can include blood and urine tests, cholesterol and blood sugar testing, an electrocardiogram to check the heart's electrical activity, and sometimes kidney or heart imaging.

Your treatment threshold and target may be influenced by your age, average readings, pregnancy status, other medical conditions, and risk of heart or blood vessel disease.

- Home monitoring: readings taken with a validated upper-arm monitor over several days
- Ambulatory monitoring: a portable device that measures pressure during normal activities and sleep
- Repeated clinic measurements: readings taken at separate appointments

## Treatment and management

Treatment aims to bring blood pressure into a safer range and reduce the chance of long-term complications. It may involve lifestyle changes, medicine, or both.

Useful lifestyle measures can include eating more vegetables, fruit, whole grains, legumes, and other minimally processed foods. Reducing sodium may help, especially if much of your diet comes from packaged, restaurant, or takeaway food.

Regular physical activity can lower blood pressure and support heart health. If weight loss is appropriate for you, even a modest reduction may improve readings. Limiting alcohol, avoiding tobacco, and getting treatment for sleep apnoea or other contributing conditions can also support control.

Lifestyle changes do not mean that hypertension is your fault. Genetic factors, ageing, medical conditions, medication effects, and social circumstances all play a part. Healthy habits may improve blood pressure but do not always remove the need for medicine.

Common categories of blood pressure medicine include:

Some people need more than one type because the medicines work in different ways. Treatment choice also depends on kidney function, pregnancy, other conditions, side effects, and interactions with other medicines.

Possible side effects differ by medicine. They can include dizziness, ankle swelling, changes in kidney function or blood salts, and a persistent cough with some ACE inhibitors like lisinopril or ramipril. Report troublesome effects rather than stopping treatment on your own. A different medicine or dose may be suitable.

Home readings can help show whether treatment is working. Keep taking medicine as directed even when you feel well, since hypertension commonly has no symptoms. Routine follow-up may include blood pressure checks and occasional blood or urine tests.

- Thiazide-type diuretics, which help the kidneys remove extra sodium and water
- ACE inhibitors or angiotensin receptor blockers, which relax blood vessels
- Calcium channel blockers, which reduce blood vessel tightening

- Other medicines used for particular health needs or resistant hypertension

## Complications

Uncontrolled hypertension can gradually injure artery walls and make the heart work harder. The risk generally rises with higher pressure and with the length of time it remains uncontrolled.

Possible complications include:

These outcomes are not inevitable. Lowering blood pressure and addressing risks such as high cholesterol, diabetes, and smoking can substantially reduce the chance of complications.

- Stroke or a transient ischaemic attack, sometimes called a mini-stroke
- Coronary artery disease, heart attack, or heart failure
- Chronic kidney disease
- Damage to small blood vessels in the eyes
- Peripheral artery disease affecting blood flow to the limbs
- Problems with memory and thinking linked to blood vessel damage
- Aortic aneurysm or dissection involving the body's main artery

## Prevention

Hypertension cannot always be prevented. Ageing, inherited traits, kidney disease, hormone disorders, pregnancy complications, and some medicines may cause or contribute to it.

You may be able to reduce your risk or delay its development by staying physically active, maintaining a weight that is healthy for you, limiting sodium and heavy alcohol use, and eating a balanced diet. Avoiding tobacco lowers your overall heart and blood vessel risk, even though smoking does not explain every case of hypertension.

Regular measurement is important because waiting for symptoms will miss many cases. How often blood pressure should be checked depends on your age, previous readings, pregnancy status, and other health risks.

## Living with it and what to expect

Hypertension is usually a long-term condition. For many people, it can be controlled with sustainable habits, medicine, or a combination of both. Treatment often continues for years, even after readings improve.

Blood pressure may change over time. Ageing, weight changes, stress, sleep, illness, pregnancy, new medicines, and kidney function can all affect it. Treatment may need adjustment, but a change does not necessarily mean that the condition has suddenly become dangerous.

A single unusual home reading is less informative than a pattern. Measure under similar conditions, record the results, and bring the record to routine appointments. If readings are repeatedly above the target set for you, arrange follow-up rather than waiting for symptoms.

Some people have resistant hypertension, meaning pressure remains high despite treatment with several appropriate medicines. This may lead to a review of measurement technique, missed doses, medication interactions, sleep apnoea, sodium intake, and possible secondary causes.

Most people with well-managed hypertension continue their usual work, exercise, travel, and family life. Ongoing care focuses on keeping pressure controlled and checking for changes in heart, kidney, and blood vessel health.

## When to get medical help

Arrange a routine appointment if several properly taken readings are above the normal range, even if you feel well. Also seek routine advice if your readings are becoming higher over time, you are having medication side effects, or you are struggling to take treatment consistently.

Contact your healthcare service promptly if a reading is above 180/120 mm Hg. Sit quietly, make sure the cuff is positioned correctly, and repeat the measurement after at least one minute. If it remains that high but you have no concerning symptoms, seek same-day professional advice rather than changing medicine yourself.

Call emergency services if very high blood pressure occurs with chest pain, severe breathlessness, new weakness or numbness, confusion, trouble speaking, major vision changes, seizure, fainting, or a sudden severe headache. Do not drive yourself.

During pregnancy or soon after giving birth, seek urgent medical advice for high readings, severe headache, vision changes, pain under the ribs, vomiting, sudden swelling, or difficulty breathing. These symptoms can occur with pre-eclampsia and need prompt assessment.

## Common questions

Can hypertension go away?

Primary hypertension is generally controlled rather than cured. Readings may improve with weight change, lower sodium intake, exercise, or treatment of sleep apnoea, but they can rise again. Secondary hypertension may improve if its underlying cause can be corrected.

Can I tell when my blood pressure is high?

Usually not. Many people feel normal even with significantly raised readings. Symptoms such as headache or dizziness are not accurate substitutes for measurement.

Does stress cause hypertension?

Stress can raise blood pressure for a short time. Long-term stress may also affect sleep, eating, alcohol use, and physical activity. However, hypertension usually results from several factors rather than stress alone.

Will I need medicine for the rest of my life?

Some people need long-term medicine, while others can reduce treatment after sustained lifestyle changes or treatment of an underlying cause. Any reduction should be medically supervised because blood pressure may rise without causing symptoms.

Is coffee safe if I have hypertension?

Caffeine can temporarily raise blood pressure, especially if you do not regularly consume it. Moderate intake is tolerated by many people, but individual responses differ. Comparing readings before and after caffeine can help identify a noticeable effect.

What is the best home blood pressure monitor?

Choose a validated automatic monitor with an upper-arm cuff that fits correctly. Wrist and finger devices are generally more sensitive to positioning. Bring your monitor to an appointment occasionally so its readings and your technique can be checked.

## Sources

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