High Blood Pressure

Blood pressure is the pressure that occurs when blood pushes against the walls of your arteries. Arteries carry blood from your heart to other parts of your body.

Normal blood pressure is less than 120/80 mm Hg.1

High blood pressure, also called **hypertension**, is blood pressure that is higher than normal.

High blood pressure is consistently at or above 130/80 mm Hg.1

Your blood pressure changes throughout the day based on your activities. Having blood pressure consistently above normal may result in a diagnosis of high blood pressure.

The higher your blood pressure levels, the more risk you have for other health problems, such as heart disease, heart attack, and stroke.

Risk factors

Risk factors that can increase your risk of high blood pressure include health conditions, your lifestyle, and your family history.

Some of the risk factors for high blood pressure cannot be controlled, such as your age or family history. But you can take steps to lower your risk by changing the factors you can control.

Conditions that can increase risk

Some medical conditions can raise your risk for high blood pressure. If you have one of these conditions, you can take steps to manage it and lower your risk for high blood pressure.

Elevated blood pressure

Elevated blood pressure is blood pressure that is slightly higher than normal. High blood pressure usually develops over time. Having blood pressure that is slightly higher than normal increases your risk for developing chronic high blood pressure.

If your blood pressure is between 120/80 mm Hg and 129/80 mm Hg, you have elevated blood pressure. Learn more about how blood pressure is measured.

You can take steps to manage your blood pressure and keep it in a healthy range.

Diabetes

About 6 out of 10 of people who have diabetes also have high blood pressure.1 Diabetes causes sugars to build up in the blood and also increases the risk for heart disease.

Talk with your doctor about ways to manage diabetes and control other risk factors.

Obesity

Having obesity is having excess body fat. Having obesity or overweight also means your heart must work harder to pump blood and oxygen around your body. Over time, this can add stress to your heart and blood vessels.

Obesity is linked to higher "bad" cholesterol and triglyceride levels and to lower "good" cholesterol levels.

In addition to high blood pressure, having obesity can also lead to heart disease and diabetes. Talk to your health care team about a plan to reduce your weight to a healthy level.

Pregnancy

Some women develop high blood pressure during pregnancy. This can put mother and baby at risk for problems during or after the pregnancy. If you are pregnant or planning to become pregnant, talk with your health care team about ways you can keep you and your baby safe.

Behaviors that can increase risk

Your lifestyle choices can increase your risk for high blood pressure. To reduce your risk, your doctor may recommend changes to your lifestyle.

The good news is that healthy behaviors can lower your risk for high blood pressure.

Unhealthy diet

A diet that is too high in sodium and too low in potassium puts you at risk for high blood pressure.

Eating too much sodium—an element in table salt—increases blood pressure. Most of the sodium we eat comes from processed and restaurant foods.

Not eating enough potassium—a mineral that your body needs to work properly—also can increase blood pressure. Potassium is found in many foods; bananas, potatoes, beans, and yogurt have high levels of potassium.

Physical inactivity

Getting regular physical activity helps your heart and blood vessels stay strong and healthy, which may help lower your blood pressure. Regular physical activity can also help you keep a healthy weight, which may also help lower your blood pressure.

Too much alcohol

Drinking too much alcohol can raise your blood pressure.

- Women should have no more than one drink a day.
- Men should have no more than two drinks a day.

Tobacco use

Tobacco use increases your risk for high blood pressure. Smoking can damage the heart and blood vessels. Nicotine raises blood pressure, and breathing in carbon monoxide—which is produced from smoking tobacco—reduces the amount of oxygen that your blood can carry.

Other factors that can increase risk

Family members share genes, behaviors, lifestyles, and environments that can influence their health and their risk for disease. High blood pressure can run in a family, and your risk for high blood pressure can increase based on your age and your race or ethnicity.

Genetics and family history

When members of a family pass traits from one generation to another through genes, that process is called heredity.

Genes likely play some role in high blood pressure, heart disease, and other related conditions. However, it is also likely that people with a family history of high blood pressure share common environments and other potential factors that increase their risk.

The risk for high blood pressure can increase even more when heredity combines with unhealthy lifestyle choices, such as smoking and eating an unhealthy diet.

Family health history is a record of the diseases and health conditions people in your family have had. Family health history is a useful tool for understanding health risks and preventing disease.

Other characteristics

Both men and women can have high blood pressure. Some other characteristics that you cannot control—such as your age, race, or ethnicity—can affect your risk for high blood pressure.

- **Age**. Because your blood pressure tends to rise as you get older, your risk for high blood pressure increases with age. About 9 out of 10 Americans will develop high blood pressure during their lifetime.2
- **Sex**. Women are about as likely as men to develop high blood pressure at some point during their lives.
- **Race or ethnicity**. Black people develop high blood pressure more often than white people, Hispanics, Asians, Pacific Islanders, American Indians, or Alaska Natives do. Compared with White people, Black people also develop high blood pressure earlier in life.3

Symptoms of High blood pressure

1. Severe Headaches

- Especially at the back of the head
- Worse in the morning
- Can feel like pounding or pressure

2. Dizziness or Lightheadedness

- Feeling faint
- Difficulty balancing
- Sudden spinning sensation

3. Blurred Vision or Vision Problems

High BP can affect blood vessels in the eyes.

Symptoms include:

- Blurred vision
- Seeing floaters
- Temporary vision loss (rare but serious)

4. Chest Pain

This can indicate:

- Hypertensive crisis
- Heart strain
- Risk of heart attack

Chest pain + high BP = emergency.

5. Shortness of Breath

High BP makes the heart work harder, causing:

- Difficulty breathing
- Feeling of tightness in the chest

6. Irregular Heartbeat (Palpitations)

You may feel:

- Heart racing
- Heart skipping beats
- Strong thumping heartbeat

7. Confusion, Anxiety, or Trouble Concentrating

When blood pressure is extremely high, the brain receives less oxygen.

8. Nosebleeds

Not common, but can occur when BP is very high suddenly.

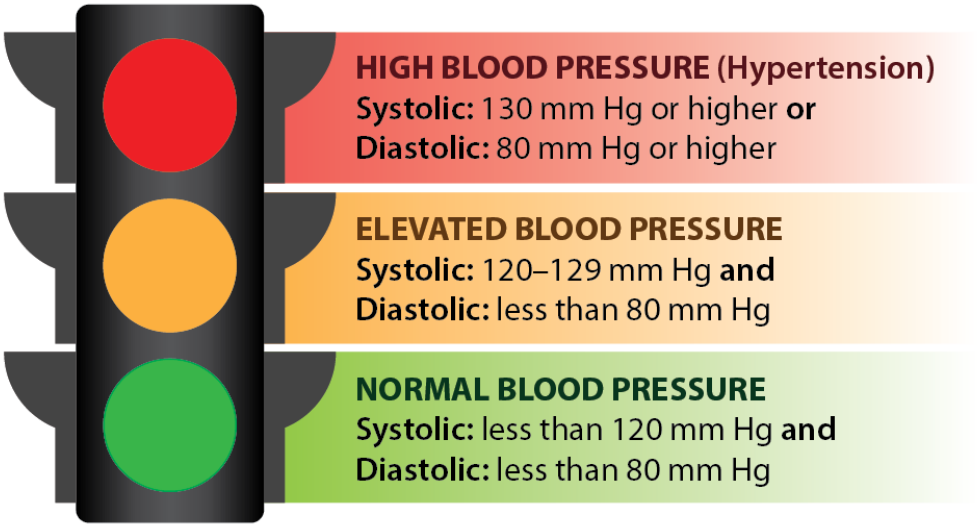
9. Fatigue or Feeling Weak

The heart struggles to pump blood efficiently, causing whole-body weakness.

10. Flushing (Red Face or Neck)

Some people experience:

- Sudden redness
- Warm feeling
  This can be triggered by high BP or stress.



Preventing High blood Pressure

Practice healthy living habits to help prevent high blood pressure

Eat a healthy diet

Choose healthy meal and snack options to help you avoid high blood pressure and its complications. Be sure to eat plenty of fresh fruits and vegetables.

Talk with your health care team about eating a variety of foods rich in potassium, fiber, and protein and lower in salt (sodium) and saturated fat. For many people, making these healthy changes can help keep blood pressure low and protect against heart disease and stroke.

The DASH (Dietary Approaches to Stop Hypertension) eating plan is a healthy diet plan with a proven record of helping people lower their blood pressure.1

Visit CDC's Nutrition, Physical Activity, and Obesity websites to learn more about healthy eating and nutrition.

Keep yourself at a healthy weight

Having overweight or obesity increases your risk for high blood pressure.

Talk with your health care team about ways to reach a healthy weight, including choosing healthy foods and getting regular physical activity.

Be physically active

Physical activity can help keep you at a healthy weight and lower your blood pressure. The Physical Activity Guidelines for Americans recommends that adults get at least 2 hours and 30 minutes of moderate-intensity exercise, such as brisk walking or bicycling, every week. That's about 30 minutes a day, 5 days a week. Children and adolescents should get 1 hour of physical activity every day.

Do not smoke

Smoking raises your blood pressure and puts you at higher risk for heart attack and stroke. If you do not smoke, do not start. If you do smoke, quitting will lower your risk for heart disease. Your doctor can suggest ways to help you quit.

For more information about tobacco use and quitting, see CDC's Smoking and Tobacco Use website.

Limit how much alcohol you drink

Do not drink too much alcohol, which can raise your blood pressure. Men should have no more than 2 alcoholic drinks per day, and women should have no more than 1 alcoholic drink per day. Visit CDC's Alcohol and Public Health website for more information.

Get enough sleep

Getting enough sleep is important to your overall health. It also helps keep your heart and blood vessels healthy. Not getting enough sleep on a regular basis is linked to an increased risk of heart disease, high blood pressure, and stroke.2 Visit CDC's Sleep and Sleep Disorders for resources on how to get better sleep.

Manage stress

People who have depression, anxiety, stress, or post-traumatic stress disorder over a long period of time may develop other health problems, including an increased heart rate and high blood pressure.

Recognize the signs and symptoms of mental health disorders and heart disease. Talk with your health care team about potential heart conditions in relation to your mental health.

Test to check high blood pressure

1. Blood Pressure Measurement (Primary Test)

Manual BP Measurement (Sphygmomanometer)

- Done by doctors/nurses
- Uses cuff + stethoscope

b) Digital BP Monitor

- Used at home
- Easy and accurate if used properly

c) Ambulatory Blood Pressure Monitoring (ABPM) – 24 Hours

- You wear a small BP monitor for 24 hours
- Measures BP every 20–30 minutes
- Best method to:
    - Detect “white coat” hypertension
    - Check night-time BP
    - Confirm diagnosis

d) Home Blood Pressure Monitoring (HBPM)

- Check BP twice daily at home
- Helps track long-term BP levels

2. Physical Examination

Doctor checks:

- Heart sounds
- Pulse
- Weight & BMI
- Swelling
- Signs of organ damage

(Not a lab test but part of diagnosis)

3. Blood Tests for Hypertension Evaluation

These tests check how high BP affects organs and find possible causes.

a) Kidney Function Tests

Because high BP affects kidneys.

- Serum Creatinine
- eGFR (Estimated Glomerular Filtration Rate)
- Blood Urea Nitrogen (BUN)

b) Electrolytes

- Sodium (Na^+)
- Potassium (K^+)
  Abnormal levels indicate hormonal or kidney-related hypertension.

c) Fasting Blood Glucose

- Diabetes often co-exists with high BP.

d) Lipid Profile

- Total cholesterol
- LDL
- HDL
- Triglycerides

Helps determine heart disease risk.

4. Urine Tests

a) Urinalysis

Checks for:

- Protein
- Blood
- Glucose

Protein in urine can indicate kidney damage from high BP.

b) ACR (Albumin-to-Creatinine Ratio)

Detects small amounts of protein leakage (early kidney damage).

5. Heart Tests to Check Effects of High BP

a) Electrocardiogram (ECG / EKG)

- Detects heart enlargement
- Checks irregular heartbeats
- Shows damage from long-term high BP

b) Echocardiogram (ECHO)

Ultrasound of the heart
Checks:

- Heart size
- Thickening of heart muscle
- Pumping strength

(This is very important in long-term hypertension.)

6. Imaging Tests

a) Chest X-Ray

Shows:

- Heart enlargement
- Lung congestion

b) Renal Ultrasound

Used when hypertension may be caused by:

- Kidney disease
- Renal artery narrowing

7. Hormonal Tests (If Secondary Hypertension Suspected)

These tests help identify rare causes:

- Renin & Aldosterone levels → detects hormonal imbalances
- Cortisol levels → Cushing's syndrome
- Thyroid tests (TSH, T3, T4) → thyroid-related BP issues
- Catecholamines / Metanephrines → pheochromocytoma (adrenal tumor)

Not done for everyone — only when BP is very high or in young patients.