

# High Blood Pressure

## What Is High Blood Pressure?

High blood pressure (HBP) is a serious condition that can lead to coronary heart disease, heart failure, stroke, kidney failure, and other health problems.

"Blood pressure" is the force of blood pushing against the walls of the arteries as the heart pumps out blood. If this pressure rises and stays high over time, it can damage the body in many ways.

## Overview

About 1 in 3 adults in the United States has HBP. HBP itself usually has no symptoms. You can have it for years without knowing it. During this time, though, it can damage the heart, blood vessels, kidneys, and other parts of your body.

This is why knowing your blood pressure numbers is important, even when you're feeling fine. If your blood pressure is normal, you can work with your health care team to keep it that way. If your blood pressure is too high, you need treatment to prevent damage to your body's organs.

## Blood Pressure Numbers

Blood pressure numbers include systolic (sis-TOL-ik) and diastolic (di-a-STOL-ik) pressures. Systolic blood pressure is the pressure when the heart beats while pumping blood. Diastolic blood pressure is the pressure when the heart is at rest between beats.

You will most often see blood pressure numbers written with the systolic number above or before the diastolic, such as 120/80 mmHg. (The mmHg is millimeters of mercury—the units used to measure blood pressure.)

All levels above 120/80 mmHg raise your risk, and the risk grows as blood pressure levels rise. "Prehypertension" means you're likely to end up with HBP, unless you take steps to prevent it.

If you're being treated for HBP and have repeat readings in the normal range, your blood pressure is under control. However, you still have the condition. You should see your doctor and stay on treatment to keep your blood pressure under control.

Your systolic and diastolic numbers may not be in the same blood pressure category. In this case, the more severe category is the one you're in. For example, if your systolic number is 160 and your diastolic number is 80, you have stage 2 HBP. If your systolic number is 120 and your diastolic number is 95, you have stage 1 HBP.

If you have diabetes or chronic kidney disease, HBP is defined as 130/80 mmHg or higher. HBP numbers also differ for children and teens. (For more information, see "How Is High Blood Pressure Diagnosed?")

## Outlook

Blood pressure tends to rise with age. Following a healthy lifestyle helps some people delay or prevent this rise in blood pressure.

People who have HBP can take steps to control it and reduce their risks for related health problems. Key steps include following a healthy lifestyle, having ongoing medical care, and following the treatment plan that your doctor prescribes.

## Other Names for High Blood Pressure

- High blood pressure (HBP) also is called hypertension.
- When HBP has no known cause, it may be called essential hypertension, primary hypertension, or idiopathic hypertension.
- When another condition causes HBP, it's sometimes called secondary high blood pressure or secondary hypertension.

In some cases of HBP, only the systolic blood pressure number is high. This condition is called isolated systolic hypertension (ISH). Many older adults have this condition. ISH can cause as much harm as HBP in which both numbers are too high.

## What Causes High Blood Pressure?

- Blood pressure tends to rise with age, unless you take steps to prevent or control it.
- Certain medical problems, such as chronic kidney disease, thyroid disease, and sleep apnea, may cause blood pressure to rise. Certain medicines, such as asthma medicines (for example, corticosteroids) and cold-relief products, also may raise blood pressure.

- In some women, blood pressure can go up if they use birth control pills, become pregnant, or take hormone replacement therapy.
- Women taking birth control pills usually have a small rise in both systolic and diastolic blood pressures. If you already have high blood pressure (HBP) and want to use birth control pills, make sure your doctor knows about your HBP. Talk to him or her about how often you should have your blood pressure checked and how to control it while taking the pill.
- Taking hormones to reduce the symptoms of menopause can cause a small rise in systolic blood pressure. If you already have HBP and want to start using hormones, talk to your doctor about the risks and benefits. If you decide to take hormones, find out how to control your blood pressure and how often you should have it checked.
- Children younger than 10 years who have HBP often have another condition that's causing it (such as kidney disease). Treating the underlying condition may resolve the HBP.
- The older a child is when HBP is diagnosed, the more likely he or she is to have essential hypertension. This means that doctors don't know what's causing the HBP.

### Who Is At Risk for High Blood Pressure?

In the United States, about 72 million people have high blood pressure (HBP). This is about 1 in 3 adults.

Certain traits, conditions, or habits are known to raise the risk for HBP. These conditions are called risk factors. This section describes the major risk factors for HBP.

#### Older Age

Blood pressure tends to rise with age. If you're a male older than 45 or a female older than 55, your risk for HBP is higher. Over half of all Americans aged 60 and older have HBP.

Isolated systolic hypertension (ISH) is the most common form of HBP in older adults. ISH occurs when only systolic blood pressure (the top number) is high. About 2 out of 3 people over age 60 who have HBP have ISH.

HBP doesn't have to be a routine part of aging. You can take steps to keep your blood pressure at a normal level. (For more information, see "How Is High Blood Pressure Treated?")

## **Race/Ethnicity**

HBP can affect anyone. However, it occurs more often in African American adults than in Caucasian or Hispanic American adults. In relation to these groups, African Americans:

- Tend to get HBP earlier in life
- Often have more severe HBP
- Are more likely to be aware that they have HBP and to get treatment
- Are less likely than Caucasians and about as likely as Hispanic Americans to achieve target control levels with HBP treatment
- Have higher rates than Caucasians of premature death from HBP-related complications, such as coronary heart disease, stroke, and kidney failure
- HBP risks vary among different groups of Hispanic American adults. For instance, Puerto Rican American adults have higher rates of HBP-related death than all other Hispanic groups and Caucasians. But, Cuban Americans have lower rates than Caucasians.

## **Overweight or Obesity**

You're more likely to develop prehypertension or HBP if you're overweight or obese. Overweight is having extra body weight from muscle, bone, fat, and/or water. Obesity is having a high amount of extra body fat.

## **Gender**

Fewer adult women than men have HBP. But, younger women (aged 18–59) are more likely than men to be aware of and get treatment for HBP.

Women aged 60 and older are as likely as men to be aware of and treated for HBP. However, among treated women aged 60 and older, blood pressure control is lower than it is in men in the same age group.

## **Unhealthy Lifestyle Habits**

A number of lifestyle habits can raise your risk for HBP, including:

- Eating too much sodium (salt)
- Drinking too much alcohol
- Not getting enough potassium in your diet
- Not doing enough physical activity

- Smoking

## **Other Risk Factors**

A family history of HBP raises your risk for the condition. Long-lasting stress also can put you at risk for HBP.

You're also more likely to develop HBP if you have prehypertension. Prehypertension means that your blood pressure is in the 120–139/80–89 mmHg range.

## **Risk Factors for Children and Teens**

Overweight is on the rise in youth younger than 18 years. As a result, prehypertension and HBP also are becoming more common in this age group.

African American and Mexican American youth are more likely to have HBP and prehypertension than Caucasian youth. Also, boys are at higher risk for HBP than girls.

Like adults, children and teens need to have routine blood pressure checks. This is even more important if a young person is overweight.

## **What Are the Signs and Symptoms of High Blood Pressure?**

High blood pressure (HBP) itself usually has no symptoms. Rarely, headaches may occur.

You can have HBP for years without knowing it. During this time, HBP can damage the heart, blood vessels, kidneys, and other parts of the body.

Some people only learn that they have HBP after the damage has caused problems, such as coronary heart disease, stroke, or kidney failure.

Knowing your blood pressure numbers is important, even when you're feeling fine. If your blood pressure is normal, you can work with your health care team to keep it that way. If your numbers are too high, you can take steps to lower them and control your blood pressure. This helps reduce your risk for complications.

## **Complications of High Blood Pressure**

When blood pressure stays high over time, it can damage the body. HBP can cause:

- The heart to get larger or weaker, which may lead to heart failure. Heart failure is a condition in which the heart can't pump enough blood throughout the body.
- Aneurysms (AN-u-risms) to form in blood vessels. An aneurysm is an abnormal bulge or "ballooning" in the wall of an artery. Common spots for aneurysms are the main artery that carries blood from the heart to the body; the arteries in the brain, legs, and intestines; and the artery leading to the spleen.
- Blood vessels in the kidney to narrow. This may cause kidney failure.
- Arteries throughout the body to narrow in some places, which limits blood flow (especially to the heart, brain, kidneys, and legs). This can cause a heart attack, stroke, kidney failure, or amputation of part of the leg.
- Blood vessels in the eyes to burst or bleed. This may lead to vision changes or blindness.

### How Is High Blood Pressure Diagnosed?

Your doctor will diagnose high blood pressure (HBP) using the results of blood pressure tests. These tests will be done several times to make sure the results are correct. If your numbers are high, your doctor may have you return for more tests to check your blood pressure over time.

If your blood pressure is 140/90 mmHg or higher over time, your doctor will likely diagnose you with HBP. If you have diabetes or chronic kidney disease, a blood pressure of 130/80 mmHg or higher is considered HBP.

The HBP ranges in children are different. (For more information, see below.)

### How Is Blood Pressure Tested?

A blood pressure test is easy and painless. This test is done at a doctor's office or clinic.

#### **To prepare for the test:**

1. Don't drink coffee or smoke cigarettes for 30 minutes prior to the test. These actions may cause a short-term rise in your blood pressure.
2. Go to the bathroom before the test. Having a full bladder can change your blood pressure reading.

Sit for 5 minutes before the test. Movement can cause short-term rises in blood pressure.

To measure your blood pressure, your doctor or nurse will use some type of a gauge, a stethoscope (or electronic sensor), and a blood pressure cuff.

Most often, you will sit or lie down with the cuff around your arm as your doctor or nurse checks your blood pressure. If he or she doesn't tell you what your blood pressure numbers are, you should ask.

### **Diagnosing High Blood Pressure in Children and Teens**

Doctors measure blood pressure in children and teens the same way they do in adults. Your child should have routine blood pressure checks starting at 3 years of age.

Blood pressure normally rises with age and body size. Newborn babies often have very low blood pressure numbers, while older teens have numbers similar to adults.

The ranges for normal blood pressure and HBP are generally lower for youth than for adults. These ranges are based on the average blood pressure numbers for age, gender, and height.

To find out whether a child has HBP, a doctor will compare the child's blood pressure numbers to average numbers for his or her age, height, and gender.

### [What Does a Diagnosis of High Blood Pressure Mean?](#)

If you're diagnosed with HBP, you will need treatment. You also will need to have your blood pressure tested again to see how treatment affects it.

Once your blood pressure is under control, you will need to stay on treatment. "Under control" means that your blood pressure numbers are normal. You also will need regular blood pressure tests. Your doctor can tell you how often you should be tested.

The sooner you find out about HBP and treat it, the better your chances to avoid problems like heart attack, stroke, and kidney failure.

### [How Is High Blood Pressure Treated?](#)

High blood pressure (HBP) is treated with lifestyle changes and medicines.

Most people who have HBP will need lifelong treatment. Sticking to your treatment plan is important. It can prevent or delay the problems linked to HBP and help you live and stay active longer.

For more tips on controlling your blood pressure, see the National Heart, Lung, and Blood Institute's (NHLBI's) "Your Guide to Lowering Blood Pressure."

### **Goals of Treatment**

The treatment goal for most adults is to get and keep blood pressure below 140/90 mmHg. For adults who have diabetes or chronic kidney disease, the goal is to get and keep blood pressure below 130/80 mmHg.

### **Lifestyle Changes**

Healthy habits can help you control HBP. Healthy habits include:

- Following a healthy eating plan
- Doing enough physical activity
- Maintaining a healthy weight
- Quitting smoking
- Managing your stress and learning to cope with stress

If you combine these measures, you can achieve even better results than taking single steps. Making lifestyle changes can be hard. Start by making one healthy lifestyle change and then adopt others.

Some people can control their blood pressures with lifestyle changes alone, but many people can't. Keep in mind that the main goal is blood pressure control. If your doctor prescribes medicines as a part of your treatment plan, keep up your healthy habits. This will help you better control your blood pressure.

### **Follow a Healthy Eating Plan**

Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have HBP. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are heart healthy and lower in sodium (salt).

This eating plan is low in fat and cholesterol. It also features fat-free or low-fat milk and dairy products, fish, poultry, and nuts. The DASH eating plan suggests less red meat (even lean red meat), sweets, added sugars, and sugar-containing beverages. The plan is rich in nutrients, protein, and fiber.

To help control HBP, you should limit the amount of salt that you eat. This means choosing low-salt and "no added salt" foods and seasonings at the table or when cooking. The Nutrition Facts label on food packaging shows the amount of sodium in the item. You should eat no more than about 1 teaspoon of salt a day.

You also should try to limit alcoholic drinks. Too much alcohol will raise your blood pressure. Men should have no more than two alcoholic drinks a day. Women should have no more than one alcoholic drink a day.

For more information on limiting salt and alcohol in your diet, see the [Your Guide to Lowering High Blood Pressure Web site](#).

### **Do Enough Physical Activity**

Regular physical activity can lower HBP and also reduce your risk for other health problems.

Check with your doctor about how much and what kinds of activity are safe for you. Unless your doctor tells you otherwise, try to get at least 30 minutes of moderate-intensity activity on most or all days of the week. You can do it all at once or break it up into shorter periods of at least 10 minutes each.

Moderate-intensity activities include brisk walking, dancing, bowling, riding a bike, working in a garden, and cleaning the house.

### **Maintain a Healthy Weight**

Staying at a healthy weight can help control blood pressure and also reduce your risk for other health problems.

If you're overweight or obese, aim to reduce your weight by 7 to 10 percent during your first year of treatment. This amount of weight loss can lower your risk for health problems related to HBP.

After the first year, you may have to continue to lose weight so you can lower your body mass index (BMI) to less than 25.

BMI measures your weight in relation to your height and gives an estimate of your total body fat. A BMI between 25 and 29 is considered overweight. A BMI of 30 or more is considered obese. A BMI of less than 25 is the goal for keeping blood pressure under control.

## **Quit Smoking**

Smoking can damage your blood vessels and raise your risk for HBP. It also can worsen health problems related to HBP. Smoking is bad for everyone, especially those who have HBP.

If you smoke or use tobacco, quit. Talk to your doctor about programs and products that can help you quit. The U.S. Department of Health and Human Services has information on how to quit smoking. Also, take steps to protect yourself from secondhand smoke.

## **Managing Stress**

Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health.

Physical activity helps some people cope with stress. Other people listen to music or focus on something calm or peaceful to reduce stress. Some people learn yoga, tai chi, or how to meditate.

## **Medicines**

Today's blood pressure medicines can safely help most people control their blood pressures. These medicines are easy to take. The side effects, if any, tend to be minor.

If you have side effects from your medicines, talk to your doctor. He or she may be able to adjust the doses or prescribe other medicines. You shouldn't decide on your own to stop taking your medicines.

Blood pressure medicines work in different ways to lower blood pressure. Some remove extra fluid and salt from the body to lower blood pressure. Others slow down the heartbeat or relax and widen blood vessels. Often, two or more medicines work better than one.

## **Diuretics**

Diuretics are sometimes called water pills. They help your kidneys flush excess water and salt from your body. This lessens the amount of fluid in your blood, and your blood pressure goes down.

Diuretics often are used with other HBP medicines and sometimes combined into one pill.

### [Beta Blockers](#)

Beta blockers help your heart beat slower and with less force. Your heart pumps less blood through your blood vessels, and your blood pressure goes down.

### [ACE Inhibitors](#)

ACE inhibitors keep your body from making a hormone called angiotensin II. This hormone normally causes blood vessels to narrow. ACE inhibitors prevent this, so your blood pressure goes down.

### [Angiotensin II Receptor Blockers](#)

Angiotensin II receptor blockers (ARBs) are newer blood pressure medicines that protect your blood vessels from angiotensin II. As a result, blood vessels relax and widen, and your blood pressure goes down.

### [Calcium Channel Blockers](#)

Calcium channel blockers (CCBs) keep calcium from entering the muscle cells of your heart and blood vessels. This allows blood vessels to relax, and your blood pressure goes down.

### [Alpha Blockers](#)

Alpha blockers reduce nerve impulses that tighten blood vessels. This allows blood to flow more freely, causing blood pressure to go down.

### [Alpha-Beta Blockers](#)

Alpha-beta blockers reduce nerve impulses the same way alpha blockers do. However, they also slow the heartbeat like beta blockers. As a result, blood pressure goes down.

### [Nervous System Inhibitors](#)

Nervous system inhibitors increase nerve impulses from the brain to relax and widen blood vessels. This causes blood pressure to go down.

## Vasodilators

Vasodilators relax the muscles in blood vessel walls. This causes blood pressure to go down.

## Treatment for Children and Teens

If another condition is causing your child's HBP, treating it often resolves the HBP. When the cause of a child or teen's HBP isn't known, the first line of treatment is lifestyle changes (as it is for adults).

If lifestyle changes don't control blood pressure, children and teens also may need to take medicines. Most of the medicines listed above for adults have unique doses for children.

## How Can High Blood Pressure Be Prevented?

### If You Have Normal Blood Pressure

If you don't have high blood pressure (HBP), you can take steps to prevent it. Lifestyle measures can help you maintain normal blood pressure.

Follow a healthy eating plan. This includes limiting the amount of sodium (salt) and alcohol that you consume. An example of a healthy eating plan is the National Heart, Lung, and Blood Institute's Dietary Approaches to Stop Hypertension (DASH).

- Lose weight if you're overweight or obese.
- Do enough physical activity.
- Quit smoking.
- Manage your stress and learn to cope with stress

Many people who take one or more of these steps are able to prevent or delay HBP. The more steps you take, the more likely you are to lower your blood pressure and avoid related health problems.

To learn more about the above steps, see "How Is High Blood Pressure Treated?"

## If You Have High Blood Pressure

If you have HBP, you can still take steps to prevent the long-term problems it can cause. Lifestyle measures (listed above) and medicines can help you live a longer, more active life.

Follow the treatment plan your doctor prescribes to control your blood pressure. It can help you prevent or delay coronary heart disease, stroke, kidney disease, and other health problems.

## Children and Teens

A healthy lifestyle also can help prevent HBP in children and teens. Key steps include having a child:

- Follow a healthy eating plan that focuses on plenty of fruits, vegetables, and, for children older than 4 years, low-fat dairy products. The plan also should be low in saturated and trans fats and salt.
- Be active for at least 1 to 2 hours per day. Limit screen time in front of the TV or the computer to 2 hours per day at most.
- Maintain a healthy weight. If your child is overweight, ask his or her doctor about how your child can safely lose weight.
- Make these habits part of a family health plan to help your child adopt and maintain a healthy lifestyle.

## Living With High Blood Pressure

If you have high blood pressure (HBP), you will need to treat and control it for life. This means making lifestyle changes, taking prescribed medicines, and getting ongoing medical care.

Treatment can help control blood pressure, but it will not cure HBP. If you stop treatment, your blood pressure and risk for related health problems will rise. For a healthy future, follow your treatment plan closely. Work with your health care team for lifelong blood pressure control.

## Lifestyle Changes

Following a healthy lifestyle is an important step for controlling HBP. A healthy lifestyle includes following a healthy eating plan, losing weight (if you're

overweight or obese), doing regular physical activity, and not smoking. (For more information, see "How Is High Blood Pressure Treated?")

## **Medicines**

You should take all blood pressure medicines that your doctor prescribes. Be sure you know the names and doses of your medicines and how to take them. If you have questions about your medicines, talk to your doctor or pharmacist.

Make sure you refill your medicines before they run out. Take your medicines exactly as your doctor directs—don't skip days or cut pills in half.

If you're having side effects from your medicines, talk to your doctor. He or she may need to adjust the doses or prescribe other medicines. You shouldn't decide on your own to stop taking your medicines.

## **Ongoing Care**

Go for medical checkups or tests as your doctor advises. Your doctor may need to change or add medicines to your treatment plan over time. Regular checkups allow your doctor to change your treatment right away if your blood pressure goes up again.

Keeping track of your blood pressure is vital. Have your blood pressure checked on the schedule your doctor advises. You may want to learn how to check your blood pressure at home. Your doctor can help you with this. Each time you check your own blood pressure, you should write down your numbers and the date.

The National Heart, Lung, and Blood Institute's (NHLBI's) "My Blood Pressure Wallet Card" can help you track your blood pressure. You also can write down the names and doses of your medicines and keep track of your lifestyle changes with this handy card.

During checkups, you can ask your doctor or health care team any questions you have about your lifestyle or medicine treatments.

## **High Blood Pressure and Pregnancy**

Many pregnant women who have HBP have healthy babies. However, HBP can cause problems for both the mother and the fetus. It can harm the mother's kidneys

and other organs. It also can cause the baby to be born early and with a low birth weight.

If you're thinking about having a baby and you have HBP, talk to your health care team. You can take steps to control your blood pressure before and while you're pregnant.

Some women get HBP for the first time while they're pregnant. In the most serious cases, the mother has a condition called preeclampsia (pre-e-KLAMP-se-ah).

This condition can threaten the lives of both the mother and the unborn child. You will need special care to reduce your risks. With such care, most women and babies have good outcomes.

See the NHLBI's [Your Guide to Lowering High Blood Pressure Web site](#) for more information about HBP and pregnancy.

## **Key Points**

- High blood pressure (HBP) is a serious condition that can lead to coronary heart disease, heart failure, stroke, kidney failure, and other health problems.
- "Blood pressure" is the force of blood pushing against the walls of the arteries as the heart pumps out blood. When this pressure rises and stays high over time, it can damage the body in many ways.
- Blood pressure numbers include systolic and diastolic pressures. Systolic blood pressure is the pressure when the heart beats while pumping blood. Diastolic blood pressure is the pressure when the heart is at rest between beats.
- All blood pressure levels above 120/80 mmHg increase your risk for the health problems related to HBP. A blood pressure level of 140/90 mmHg or higher is considered HBP for most adults. If you have diabetes or chronic kidney disease, a blood pressure of 130/80 mmHg or higher is considered HBP.
- Blood pressure tends to rise with age. Certain medical problems and medicines may cause blood pressure to rise. In some women, blood pressure can go up if they use birth control pills, become pregnant, or take hormone replacement therapy.
- Children younger than 10 years who have HBP often have another condition that's causing it (such as kidney disease). Treating the underlying condition may resolve HBP.

In the United States, about 72 million people have HBP. This is about 1 in 3 adults. Certain traits, conditions, or habits may raise your risk for HBP. These include older age, race/ethnicity, overweight or obesity, gender, unhealthy

lifestyle habits, a family history of HBP, long-lasting stress, and having prehypertension (blood pressure levels between 120–139/80–89).

- HBP itself usually has no symptoms. Rarely, headaches may occur. Some people only learn that they have HBP after it causes health problems, such as coronary heart disease, stroke, or kidney failure.
- Your doctor will diagnose HBP using the results of a blood pressure test. This test is easy and painless. It may be done several times to make sure the results are correct.
- Doctors measure blood pressure in children and teens the same way they do in adults. However, the ranges for normal blood pressure and HBP are different for youth than for adults. These ranges are based on the average blood pressure levels for a child or teen's age, gender, and height.
- HBP in adults and children is treated with lifestyle changes and medicines. Lifestyle changes include following a healthy eating plan, doing enough physical activity, maintaining a healthy weight, quitting smoking, and managing and coping with stress.
- If you have normal blood pressure, you can take steps to prevent or delay HBP. Healthy lifestyle habits can help you maintain normal blood pressure.
- If you have HBP, you can take steps to prevent the long-term problems it can cause. Adopt healthy lifestyle habits and follow the treatment plan your doctor prescribes. Children and teens can prevent HBP and its related problems in the same ways.