

### What is hypertension?

Hypertension is another name for high blood pressure. It is a condition that occurs when the pressure inside of your large arteries is too high. Because it is a silent disorder, the only way to detect hypertension is to have your blood pressure measured. Hypertension is a very common problem that affects about 50 million people in the United States alone. It is more common as people grow older and is both more common and more serious in African Americans. Hypertension is **not** simply being tense or nervous.

### What causes hypertension?

More than 9 of every 10 people who have hypertension do not have a cause for it that can be identified. We do know that you can inherit the tendency to hypertension from your parents. If one of your parents has hypertension, you are more likely to develop it than if both parents have normal blood pressure. If both of your parents have hypertension, it is highly likely that you will get it also. Although less likely, you can still get hypertension even if your parents had normal blood pressure. Your environment also plays a very important role. For example, you have a chance to avoid hypertension by keeping your weight under control, keeping physically fit, eating a healthy diet, limiting your alcohol intake (no more than two mixed drinks or two 12 oz. cans of beer or two 6 oz. glasses of wine daily), and avoiding medications that might increase your blood pressure. You cannot choose your own parents, but you can help reduce your chance of getting hypertension by leading a very healthy lifestyle. (See numbers 7 and 10.)

There are other less common causes of hypertension. Most are due to disorders of the kidneys or endocrine glands. Your doctor can determine if the disorders are related to your hypertension by taking your history, performing a physical examination, and doing a few simple blood and urine tests. More sophisticated testing is not often required.

### Can hypertension lead to other health problems?

Yes, hypertension can lead to other serious health problems or even death. Hypertension has been called “the silent killer” for two reasons. First, it is silent since it has no specific symptoms. Such things as dizziness, nervousness, nosebleeds or headaches rarely have anything to do with hypertension. Hypertension can be detected only by measuring your blood pressure. Secondly, it is a killer. People who have hypertension that is not treated are much more likely to die from or be disabled by cardiovascular complications such as strokes, heart attacks, heart failure, heart rhythm irregularities, and kidney failure than people who have normal blood pressure.

### How do you know if your blood pressure is too high?

The only way to know your blood pressure is to have it measured. Although this is a very simple process, it is important that it be measured correctly. You should be seated for about 5 minutes before your blood pressure is determined. If the reading is made while you are agitated, excited or angry, it may be high due to your emotional state. This can lead to unnecessary treatment or treatment with too much medication. You should also avoid food, alcohol, caffeine and tobacco in the 30-60 minutes before your blood pressure is determined. If you are seated, your back should be supported. Your arm should be at the level of your heart. If you are taking medication to lower your blood pressure, it is a good idea to have your blood pressure taken in the standing position as well. This procedure will help to reduce the risk of getting dizzy from too much medication.

### What do your blood pressure numbers mean?

Your blood pressure is usually represented as two numbers, for example 116/72 or 116 over 72. The top number is called the systolic (pronounced sis-tah-lick) pressure. It indicates the peak pressure in your arteries that is generated when your heart beats. The bottom number is called the diastolic (pronounced dias-tah-lick) pressure. It indicates the pressure in your arteries when your heart is relaxing between heartbeats. It gives a clue to how much resistance your small arteries are putting up to the flow of blood. The pressure in your large arteries is a combination of the force of the heartbeat and the resistance of the small arteries. Younger people with hypertension tend to have a more forceful heartbeat, while older hypertensives tend to have higher resistance. Some people, particularly older individuals, have a high systolic pressure but a normal or low diastolic pressure. This is called isolated systolic hypertension and suggests that their arteries have become very stiff.

### What should your blood pressure be?

Blood pressure is not a fixed number. It varies with physical activity, excitement, time of day or night, and with emotional factors. This is why it is important to have your blood pressure taken under proper conditions (see number 4) and on more than one occasion.

Optimal blood pressure, the level associated with the lowest cardiovascular risk, is less than 120/80 (measured in millimeters of mercury or mm Hg). It may be perfectly normal for a young, healthy woman to have a blood pressure of 90/60. Once blood pressure rises continuously above 120/80, the risk of cardiovascular disease begins to increase. Hypertension is usually said to be present when the blood pressure is consistently above 140 systolic or 90 diastolic, or both. The higher the blood pressure, the greater the cardiovascular risk. The longer the duration of hypertension, the greater the cardiovascular risk. People with diabetes or kidney disease should try to keep their blood pressure at around 120/80 because they are at higher risk for the consequences of hypertension.

## 7 If you have hypertension, what should you do to get your blood pressure under control?

Your full participation in your own care is the most important part of your treatment. You should establish good communication with your doctor and have a say in how you are being treated. Talk with your doctor about the desired goal level for your blood pressure. Keep your own personal record of your blood pressure readings. Be open with your doctor to get help in resolving any problems that might block you from achieving your blood pressure goal.

Every hypertensive patient or individual at high risk of developing hypertension should follow a healthy lifestyle. This means losing weight if you are overweight, reducing any excess amount of salt that you eat, increasing the amount of potassium and calcium in your diet, avoiding excess alcohol intake (more than two drinks a day), getting proper exercise, and never ever smoking. Avoid excessive use of drugs that can increase your blood pressure such as decongestant nasal sprays and pain medications called non-steroidal anti-inflammatory drugs (NSAIDs). If your blood pressure remains or becomes high, your doctor may prescribe medication.

## 8 Is hypertension treatable?

Yes, hypertension can be treated successfully. One of the great advances in medicine in the past 40 years is treating hypertension with medicines that have become available since 1958. Unfortunately, most people with hypertension don't even know that they have it and only about one in four hypertensive patients is receiving adequate treatment to control their hypertension.

## 9 How is hypertension treated?

One must first start with the healthy lifestyle changes mentioned in number 7. Some people with very minimal elevations of blood pressure will respond to this non-drug treatment alone. Even with adherence to a healthy lifestyle, a person's blood pressure may rise as they grow older and they may, at some point, require drug treatment. Even if medication is required, a healthy lifestyle should be continued. That will make the medications more effective and possibly reduce the amount required. Once medications are started, it is extremely important to continue with the treatment. People who stop treatment almost always return to their original blood pressure level or higher. The treatment for most patients is life-long. If you have a problem with a medication, always tell your doctor. Do not just stop a medication on your own.

## 10 What types of medications control hypertension?

Your doctor can prescribe a wide variety of medications to control your blood pressure. In general, doctors try to find a single drug that is best for the individual patient. Since all patients are different, the doctor will consider whether your hypertension is completely uncomplicated, whether you have another disease such as diabetes or a heart problem, whether you have some specific indication or contraindication for a specific drug, and whether your past experience with hypertension treatment dictates a choice of drug. Your individual age, race, and lifestyle may influence the choice of treatment. If the first drug is not effective or causes adverse effects, your doctor will choose an alternate drug or drugs.

### *Types of drugs that can control high blood pressure are:*

- Diuretics, which initially boost urination to reduce salt and water retention and lower blood volume. They are useful alone or in combination with other drugs.
- Beta-blockers, which slow the heart rate and lower the output of the heart.
- Angiotensin converting enzyme (ACE) inhibitors, which block production of a specialized hormone called angiotensin II. Angiotensin II causes the arteries to constrict and also stimulates the release of another hormone that causes the kidneys to retain salt.
- Angiotensin II receptor blockers (ARBs), which relax blood vessels by blocking the action of angiotensin II.
- Calcium channel blockers of which there are two types: dihydropyridines (DHPs), and heart rate slowing calcium channel blockers. Both types relax blood vessels by slowing the entry of calcium into cells. The DHPs increase the heart rate a little while the others slow it a little.
- Alpha-1 blockers work on the blood vessels to block the effect of constricting hormones such as norepinephrine. These are also commonly used to treat prostate problems.
- Alpha-2 agonists, which work in the brain to decrease the action of the nervous system to constrict blood vessels.
- Direct vasodilators, which relax the artery walls.
- Sympathetic nerve blockers, which prevent those nerves from constricting blood vessels.

## 1 Why is your full cooperation important in treating your hypertension?

In order to control hypertension or any other illness and have the most benefit from treatment, patients must follow medical advice. This includes living a healthy lifestyle and taking their medicine in the amounts and at the times recommended. Most people, however, have some difficulty maintaining healthy habits and taking their medicine as prescribed. Many people simply forget to take their medication. Others stop taking their medication because they believe that it makes them feel worse or because it is too expensive. Others stop because they feel better and mistakenly believe that they no longer need the medication. Some stop because their blood pressure became normal with treatment and they mistakenly thought that they were “cured”. Uncontrolled hypertension is a serious problem. It can cause heart disease, heart attack, stroke or kidney failure. If you experience side effects from your medication or have other difficulties taking it as prescribed, continue taking it but contact your doctor or pharmacist quickly to discuss the issue.

## Should I monitor my own blood pressure?

People with hypertension who keep an accurate record of their blood pressure readings can discuss them with their doctor at their regular examination or any time their “numbers” change drastically. They become much more involved in their own care. If you measure your blood pressure at home, be sure to have your monitoring device calibrated at your doctor’s office to assure accurate readings. Talk with your doctor about how often you should measure your blood pressure and how you should share this information. You might arrange to transmit your readings by fax or by e-mail. Your blood pressure readings will vary with the time of day and may be higher if you are under stress or in pain. Take your blood pressure at the same time every day for the most accurate results. The most precise blood pressure readings, however, are those taken by your trained health care provider.

## What is the American Society of Hypertension?

The American Society of Hypertension, Inc. is the largest US organization devoted exclusively to the study and treatment of hypertension and cardiovascular diseases. The organization is committed to educating physicians and other health professionals about new research findings and treatment options with the goal of controlling high blood pressure and reducing the risk of cardiovascular and kidney disease and stroke. The American Society of Hypertension publishes the *American Journal of Hypertension* and has established a program to designate a limited number of physicians as Hypertension Specialists.

## Where can I find more information on hypertension?

Further information about hypertension and related cardiovascular disease can be found on the websites of the American Society of Hypertension ([www.ash-us.org](http://www.ash-us.org)), and the National Heart Lung & Blood Institute ([www.nhlbi.org](http://www.nhlbi.org)).

**Related Hypertension Organizations** (can be found on the “Links” page at [www.ash-us.org](http://www.ash-us.org)):

- American Heart Association (AHA)
- NIH/National High Blood Pressure Education Council (NHBPEC)
- International Society of Hypertension (ISH)
- International Society of Hypertension In Blacks (ISHIB)
- World Hypertension League (WHL)

**Information for Health Care Professionals** can be found on the “About Hypertension” page at [www.ash-us.org](http://www.ash-us.org):

- Joint National Committee Report on Hypertension (VII)
- Hypertension Drugs
- Hypertension Completed and Ongoing Trials
- Hypertension Statistics
- Hypertension Guidelines
- High Blood Pressure Information

**Information for General Public & Patients** can be found on the “About Hypertension” page at [www.ash-us.org](http://www.ash-us.org):

- WEB MD: Hypertension
- High Blood Pressure Information



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## Background

To better understand, disseminate, and evaluate the vast accumulation of data on hypertension, and to provide a separate forum for those involved in the study or management of high blood pressure, 17 world-famous clinicians and scientists met in 1985 and formed the American Society of Hypertension, Inc. (ASH). ASH is the largest organization in the United States devoted exclusively to hypertension and related cardiovascular diseases, with a national and international membership of physicians & scientists and other health care providers as well as individuals with a scientific interest in hypertension.

The primary mission of the Society is to promote and encourage the development, advancement, and exchange of scientific information in all aspects of research, diagnosis and treatment of hypertension, and related cardiovascular diseases. Accordingly, the Society encourages the participation of the broadest possible array of scientific disciplines to conduct educational activities such as its Annual Scientific Meeting, the Annual John H. Laragh Conference, and other research and educational programs.

Through the years, ASH has become a scientific organization focused on education, research and clinical treatment strategies for hypertension, and serves as a research forum for clinicians, scientists, industry and government agencies.

## PATIENT INFORMATION GUIDE



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SOCIETY OF

HYPERTENSION, INC.

ASH

UNDERSTANDING  
 HYPERTENSION