



American Heart
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SPECIAL REPORT

Living With Hypertension



What Is Hypertension?

Hypertension is blood pressure that is too high.



As a pump, your heart creates pressure to force blood to all parts of your body through your arteries. But damaged, narrowed arteries cause blood to be pumped with excessive force against the walls of the arteries, overworking the heart and arteries. Two numbers are used to record blood pressure:

- **Systolic**—The top or larger number measures the pressure in your arteries while your heart beats.
- **Diastolic**—The bottom or smaller number measures the pressure while your heart rests between beats.

The numbers are used together to represent your blood pressure reading—such as 120/80 mm Hg (millimeters of mercury). Use the chart below to determine your blood pressure type.

Type of Blood Pressure	Systolic (top) Pressure		Diastolic (bottom) Pressure
Normal	Less than 120	AND	Less than 80
Prehypertension	Between 120-139	OR	Between 80-89
Hypertension	140 or higher	OR	90 or higher
Hypertension (if you have diabetes or kidney disease)	130 or higher	OR	80 or higher

To learn more about hypertension, talk to your health care professional, use this guide, call **1-800-AHA-USA1** or go to www.americanheart.org, www.nhlbi.nih.gov or www.nlm.nih.gov/medlineplus/highbloodpressure.html.

For more information on the American Academy of Physician Assistants, visit www.aapa.org.

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Detecting It Early

The potential harmful effects of hypertension can be prevented or reduced if it is detected early enough. But there is only one way to know if your blood pressure is high—have it checked.

If your blood pressure reading is at the top of the normal range, or if you have a family history of hypertension, you're at higher risk. In that case, your health care professional can tell you how often to have your blood pressure checked.

Knowing your risk factors will help prevent hypertension.

Uncontrollable Risk Factors

- **Race.** African Americans develop hypertension more often than Caucasians.
- **Heredity.** If your parents or other close blood relatives have hypertension, you are more likely to develop it. You also are at greater risk of cardiovascular disease (heart and blood vessel disease) if any of the men in your family under 55 years old, or the women under 65, have died of cardiovascular diseases.
- **Age.** The older you get—particularly over age 60—the greater your risk of developing hypertension. Men develop it most often between the ages of 35 to 55. Women are more likely to develop it after menopause.

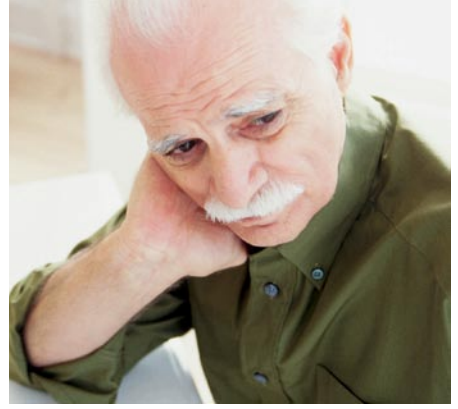
Hypertension cannot be cured, but it usually can be controlled once you learn about the risk factors and follow your health care professional's advice.

Controllable Risk Factors

- **Overweight and obesity.** People with a body mass index (BMI) of 30 or higher are more likely to develop hypertension. To calculate your BMI, go to www.nhlbisupport.com/bmi/bmicalc.htm.
- **Salt intake.** Eating too much salt increases blood pressure in some people.
- **Physical inactivity.** An inactive lifestyle adds body weight and tends to make hypertension worse.
- **High cholesterol.** Some people have high cholesterol that can lead to a fatty buildup in the arteries. High cholesterol is an important cause of cardiovascular disease that can lead to high blood pressure and heart problems.
- **Excessive alcohol.** An average of more than one alcoholic drink a day for women or more than two drinks a day for men raises blood pressure and can lead to a stroke.
- **Stress.** Individual response to stress may be a contributing factor. For example, people under stress may overeat or start smoking.



Silent and Deadly



A disease with few symptoms, left unchecked, can do serious damage.

Many people have hypertension for years without even knowing it. According to recent estimates, one in four adults in the United States has hypertension, but, because there are few symptoms, nearly one-third of these people don't know they have it. That is why it is called the "silent killer."

Even so, certain symptoms can point to hypertension, including headaches, nosebleeds, breathing difficulties, sleepiness and even heart attack or stroke.

Regular Checks

Hypertension left uncontrolled can lead to stroke, heart attack, heart failure or kidney failure, and the only way to tell if you have the condition is to have your blood pressure checked.

If you have not been diagnosed with hypertension and you are at least 18 years old, your health care professional should check your blood pressure at every office visit or at least once every two years.

Unknown Causes

Certain diseases—kidney disease, renovascular hypertension, and diseases of the endocrine glands—can be causes of hypertension. But in 90 percent to 95 percent of cases, the cause of hypertension is unknown.

A single elevated blood pressure reading doesn't mean you have hypertension, but your blood pressure is considered high if it reads 140/90 or above on more than one occasion.

Monitoring Your Blood Pressure at Home Between Visits to Your Health Care Professional Can Help Prevent and Control Hypertension

Features of blood pressure monitors

- Upper arm type
- Wrist type
- Inflates manually
- Inflates automatically
- Takes three consecutive measurements
- Keeps track of measurements for next health care professional's visit

Choosing your blood pressure monitor

- **Simplicity:** Choose a simple design that is easy for you to use.
- **Reliability:** Choose a monitor that will perform accurately each time.

Using your blood pressure monitor

- Before making the measurement, relax and rest for at least five minutes.
- Keep the blood pressure cuff at heart level when making the measurement.

The Damage It CAN DO

What Happens to Your Body



The strain that hypertension produces on the body can injure the heart.

The Heart

High blood pressure, created by a hard-pumping heart, can result in damage to the delicate tissues of the heart and arteries. As the damaged arteries thicken and lose their elasticity, the heart must pump harder to force blood through the arteries.

The Arteries

The damage caused by the constant pressure that untreated hypertension exerts on artery walls can lead to atherosclerosis—the severe narrowing and hardening of the arteries.

Arteries hardened and narrowed by atherosclerotic plaques (fatty buildup) may not be able to supply enough blood to your body's organs. If the organs don't get enough oxygen and nutrients, they can't work properly. Another risk is that atherosclerotic plaques may rupture, creating a snag where a blood clot forms and blocks the artery, shutting off normal blood supply to part of the body. If that happens in an artery that supplies the heart or the brain, a heart attack or stroke ("brain attack") occurs.

Effects of Hypertension

The effect hypertension has on the body's organs increases your risk of getting other diseases.

Untreated hypertension can lead to:

- Stroke
- Heart attack
- Heart failure
- Kidney failure
- Eye damage
- Peripheral artery disease (blood vessel damage)



Healthy artery walls allow blood to flow freely.



Artery walls become rough and collect plaque.



Artery walls thicken and blood flow is reduced.

Illustration
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A Better Lifestyle

Stopping smoking, a healthy diet and increased physical activity can lower your blood pressure significantly.

Stop Smoking

Smoking greatly increases the risk of heart attack or stroke, especially for those with hypertension. Stopping smoking is essential, so talk to your health care professional if you need help to stop.

Healthy Diet

Your health care professional can prescribe a diet for you if you also are overweight. Other qualified health professionals, such as registered dietitians and nurses, can help you start or follow a diet.

Follow your diet closely, including advice about reducing how much alcohol you drink. Alcoholic drinks are high in calories, and too much alcohol also can raise blood pressure.

Eating less sodium can help lower blood pressure for some people, so your health care professional may recommend a low-salt diet to see whether or not it helps you. That means you'll need to avoid salty foods by reducing the amount of salt you use in cooking and at the table and start reading package labels regularly to learn about the sodium content of prepared foods.

Most Americans eat much more salt than they need. Healthy adults should reduce their sodium intake to no more than 2,400 mg per day, or about one teaspoon of salt. By experimenting with herbs and spices as seasonings, you can still enjoy tasty meals with less salt.



Regular Physical Activity

Don't be afraid to be active. Daily physical activity will help reduce blood pressure and can help you lose weight or stay at your best weight. Often when people lose weight, their blood pressure drops automatically. Choose physical activities that you enjoy and can do regularly.

An inactive lifestyle is a risk factor for heart disease and stroke. It also tends to add to obesity, which is a risk factor for hypertension. Besides helping to reduce blood pressure and control weight, regular physical activity helps to reduce stress, so talk to your health care professional about a good plan for you.

Behavior Modification

Studies show that changing your behavior may temporarily lower your blood pressure. Techniques might include progressive relaxation techniques, relaxation response, meditation, stress management and biofeedback. Ask your health care professional whether any of these could help you.

Managing the Condition



The right medications matched to the patient's characteristics can do wonders to control blood pressure levels.

If proper diet and regular physical activity are not enough to keep your blood pressure within safe limits, your health care professional will prescribe a medication.

Diuretics

Diuretics, or “water pills,” are often the first medication chosen. These drugs help control blood pressure by ridding the body of excess salt and water. If diuretic therapy doesn't bring your blood pressure down to normal, your health care professional may have you take other medications.

Beta Blockers

Beta blockers lower blood pressure by slowing the heart rate and reducing the force of the heartbeat, easing the heart's workload.

Calcium Channel Blockers

Calcium channel blockers can decrease the heart's pumping strength and relax blood vessels.

ACE Inhibitors

ACE (angiotensin converting enzyme) inhibitors lower the body's production of angiotensin II, a chemical that causes the arteries to narrow and raises blood pressure.

ARBs

The ARBs (angiotensin receptor blockers) block the effects of angiotensin II on the arteries.

Vasodilators

Vasodilators, another useful group of drugs, can cause the muscle in blood vessel walls to relax, allowing the vessel to widen. They're especially effective in the arterioles, very small arteries that connect larger arteries to the tiny capillaries.

In most cases, these drugs lower blood pressure. Quite often, however, people respond very differently to them. That's why most patients must go through a trial period to find out which medications work best with the fewest side effects. Patients frequently must take two to three medications to control their blood pressure.

Three Main Things

The American Heart Association recommends that people with high blood pressure should do three things:

- Follow their health care provider's instructions.
- Stay on their medication.
- Make and maintain lifestyle changes.

For more information on the American Academy of Physician Assistants, visit www.aapa.org.

What is a physician assistant?

Physician assistants (PAs) are health care professionals licensed to practice medicine with physician supervision. As part of their comprehensive responsibilities, PAs conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventive health care, assist in surgery, and write prescriptions. PAs may also be involved in patient education, research, and administrative services. Because of the close working relationship the PAs have with doctors, a PA's education is designed to complement physician training.

What can a PA do?

Physician assistants are found in all areas of medicine. You can find them in family medicine, internal medicine, pediatrics, geriatrics, and obstetrics and gynecology—as well as cardiology (a specialty that treats diseases of the heart), surgery, and the surgery subspecialties. What a physician assistant does corresponds to the doctor's practice. In general, a physician assistant will see many of the same types of patients as the physician. The cases handled by doctors are generally the more complicated medical cases or those requiring care that is not a routine part of the PA's work. PAs will refer a patient to the doctor or request the doctor's consultation for unusual or hard to manage cases.

What is the American Academy of Physician Assistants?

AAPA is the only national professional society to represent all physician assistants in every area of medicine. Founded in 1968, the academy has a federated structure of chapters representing PAs in all 50 states, the District of Columbia, Guam, and the federal services. AAPA's mission is to provide quality, cost-effective, and accessible health care, as well as to support the professional and personal development of PAs. The AAPA pursues these goals through government relations and public education programs, research and data collection efforts, and continuing education activities.

What do patients and physicians think about physician assistants?

The relationship between a PA and the supervising physician is one of mutual trust and respect. The physician assistant is a representative of the physician, treating the patient in the style and manner developed and directed by the supervising doctor. The physician and PA practice as members of a medical team.

The American Medical Association, the American College of Surgeons, the American Academy of Family Physicians, the American College of Physicians, and other national medical organizations support the physician assistant profession by actively serving on the national PA certifying commission and the PA education program accrediting agency.

The Eighth Report to the President and Congress on the Status of Health Personnel in the United States (released in 1992) states, "Physician assistants have demonstrated their clinical effectiveness both in terms of quality of care and patient acceptance."

What's the difference between a PA and a physician?

Physician assistants are educated in medicine, like doctors; in some schools, they attend many of the same classes as medical students. One of the main differences between PA education and physician education is not the core content of the curriculum, but the amount of time spent in formal education. In addition to time in school, doctors are required to do an internship, and following that, the majority also complete a residency in a specialty. PAs do not have to undertake an internship or residency. A PA shares the responsibility for caring for a patient with the supervising doctor.

For more information about physician assistants, their education, and what they do, visit www.aapa.org.

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