Understanding High Blood Pressure

What is high blood pressure?

If someone were to take your blood pressure immediately after you'd delivered a speech or jogged five miles, the reading would undoubtedly seem high. This is not necessarily cause for alarm: It's natural for blood pressure to rise and fall with changes in activity or emotional state. It's also normal for blood pressure to vary from person to person, even from one area of your body to another. But when blood pressure remains consistently high, corrective steps should be taken.

High blood pressure, or hypertension, is the most common of all cardiovascular diseases in the industrialized world. It is the leading cause of stroke and a major cause of heart attack. In the U.S. alone, approximately 50 million people over age 6 have high blood pressure. That's one in five Americans and one in four adults. And one-third of people with high blood pressure are unaware that they have it.

Blood pressure refers to the force of blood pushing against artery walls as it courses through the body like air in a tire, blood fills arteries to a certain capacity. Just as too much air pressure can damage a tire, too much blood pressure can threaten healthy arteries and lead to life-threatening conditions such as heart disease and stroke.

A blood pressure reading appears as two numbers. The first and higher of the two is a measure of systolic pressure, or the pressure in the arteries when the heart beats and fills them with blood. The second number measures diastolic pressure or the pressure in the arteries when the heart rests between beats. Normal blood pressure rises steadily from about 90/60 at birth to about 120/80 in a healthy adult.

People with blood pressure of 140/90 or higher on at least two occasions are said to have high blood pressure. If the levels remain high, the doctor will probably begin treatment. Patients with blood pressure readings of 200/120 or higher need treatment immediately. People with diabetes are treated if their blood pressure rises above 135/80, as this population already has a high risk of heart disease.Researchers identified people with blood pressures slightly higher than 120/80 as a category at high risk for developing hypertension. This condition is called prehypertension and affects an estimated 45 million men and women in the U.S.

Consistently high blood pressure forces the heart to work far beyond its capacity. Besides injuring blood vessels, it can damage the brain, eyes, and kidneys. Even so, many people with high blood pressure do not realize they have the condition. Indeed, hypertension is often called "the silent killer" because it rarely causes symptoms even as it inflicts serious damage on the body. Left untreated, high blood pressure can lead to vision problems, as well as to heart attack, stroke, and other potentially fatal conditions, including kidney failure.

Hypertension may also lead to heart failure, a common but disabling condition that can cause breathing problems. Patients who suffer organ damage as a result of high blood pressure are said to have malignant hypertension; the diastolic pressure in such cases usually exceeds 130. Malignant hypertension is a dangerous condition that develops rapidly and requires immediate medical attention. Fortunately, high blood pressure can be controlled effectively. The first step is discovery, so have your blood pressure checked regularly.

High blood pressure is more likely in people who:
• Have a family history of high blood pressure, heart disease, or diabetes
• Are black
• Are pregnant or take birth-control pills
• Are over age 60
• Are overweight
• Are not active
• Drink excessively
• Smoke
• Eat foods high in fat or sodium

What causes it?
In as many as 95% of reported high blood pressure cases in the U.S., the underlying cause cannot be determined. This type of high blood pressure is called essential hypertension.

When a direct cause can be identified, the condition is described as secondary hypertension. Among the known causes of secondary hypertension, kidney disease ranks highest. The condition can also be triggered by tumors or other abnormalities that cause the adrenal glands (small glands that sit atop the kidneys) to secrete excess amounts of the hormones that elevate blood pressure. Birth-control pills (specifically those containing estrogen) and pregnancy can boost blood pressure, as can medications that constrict blood vessels.

Though essential hypertension remains somewhat mysterious, it has been linked to certain risk factors. High blood pressure tends to run in families, for example, and it is more likely to affect men than women. Age and race also play a role. In the U.S., blacks are twice as likely as whites to have high blood pressure, although the gap begins to narrow around age 44. After age 65, black women have the highest incidence of high blood pressure.

Essential hypertension is also greatly influenced by diet and lifestyle. The link between salt and high blood pressure is especially compelling. People living on the northern islands of Japan eat more salt per capita than anyone else in the world and exhibit the highest incidence of essential hypertension. By contrast, people who add no salt to their food show virtually no traces of essential hypertension. The majority of all people with high blood pressure are "salt sensitive," meaning that anything more than the minimal bodily need for salt is too much for them and leads to an increase in blood pressure. Other factors that have been associated with essential hypertension include obesity; diabetes; stress; insufficient intake of potassium, calcium, and magnesium; lack of physical activity; and chronic alcohol consumption.

What are the symptoms of high blood pressure?

In the vast majority of cases, there are no clear warning signs of high blood pressure. This is why high blood pressure is called a "silent" disease and why people often believe it doesn't require treatment.

If symptoms do occur, they may include:
• Headaches, chest pain or tightness, nosebleeds, and numbness and tingling; you may have severe hypertension.
• Excessive perspiration, muscle cramps, weakness, palpitations, and frequent urination; you may have secondary hypertension, possibly caused by a tumor or an adrenal gland disorder.
Call Your Doctor If:
• While taking antihypertensive drugs you experience worrisome side effects, such as drowsiness, constipation, dizziness, or loss of sexual function. Your doctor may need to prescribe a different drug.
• You are pregnant and develop hypertension. Symptoms may include severe headache and sudden swelling of the legs. High blood pressure during pregnancy can affect not only your own health but also that of your unborn child.
• You are experiencing severe headaches, nausea, blurred vision, and confusion or memory loss; you may have malignant hypertension, which can result in stroke or heart attack if left untreated.
• Your diastolic pressure -- the second or bottom number in a blood pressure reading -- suddenly shoots above 130. You may have malignant hypertension, a life-threatening condition.

How do I know if I have high blood pressure?

Your health-care provider can tell if you have high blood pressure by checking your blood pressure with a blood pressure cuff.

What are the treatments?

Making lifestyle adjustments is key to maintaining normal blood pressure. In fact, most doctors will suggest lifestyle changes before prescribing drugs. And lifestyle changes are the recommended treatment for prehypertension.
• Quit Smoking. This is perhaps the most important step a person can take to improve health.
• Lose Weight. Losing weight not only decreases blood pressure, but it also can reverse some of the heart damage caused by high blood pressure.
• Eat Right. Studies show that a diet low in salt and fat and high in fruits and vegetables can significantly lower blood pressure. Also, make sure you get enough vitamins and minerals -- some studies show that having the recommended amounts of vitamins C and E, potassium, magnesium, and calcium can improve heart health.
• Exercise. Regular aerobic activity such as walking three to four times per week can lower blood pressure. Regularity of exercise is as important as intensity.
• Limit Alcohol. Women should drink no more than one alcoholic drink per day; men should limit intake to two drinks or fewer (one 6-ounce glass of wine, one 12-ounce beer, or a 1-ounce shot glass of liquor).
• Reduce Stress. Emotional factors do play a role in blood pressure. Studies show that relaxation techniques such as meditation, yoga, or even therapy to change reactions to stress may reduce blood pressure.

Women should discuss with their doctor the increased risk of high blood pressure from taking birth control pills (especially if they are over 35 and overweight).

But be sure to consult a doctor for an accurate diagnosis and treatment plan. While essential hypertension cannot be cured, it can be treated effectively, and secondary hypertension can often be cured by addressing the underlying cause.

If you have high blood pressure, you'll probably find out about it during a routine checkup. (You may also have noticed a problem while taking your own blood pressure, but be sure to check with your doctor for a definite diagnosis.) Take the opportunity to learn what you can do to bring your blood pressure under control.

Sometimes hypertension requires drug therapy, either because of severity or because it does not respond to self-help measures. Blood pressure medication usually needs to be taken for life. A number of drugs are used alone or in combination to treat high blood pressure:
• Diuretics, or water pills, rid the body of salt and excess fluids.
• Beta-blockers make the heart beat more slowly and with less force. These are particularly effective in people with heart disease.
• Calcium-channel blockers reduce blood pressure by dilating blood vessels. These drugs remain somewhat controversial.
• Angiotensin-converting enzyme (ACE) inhibitors block factors that cause blood vessels to constrict, making them dilate and thus reducing blood pressure. These drugs can decrease risk of kidney disease, heart disease, and stroke and are especially useful in people with heart disease or diabetes.
• Angiotensin II receptor blockers (ARBs) are a newer type of blood pressure medicine, which work in a similar way to ACE inhibitors.
• Alpha1-adrenergic blockers and centrally acting agents lower blood pressure by relaxing and dilating arteries.
Warning: Do not stop taking prescribed medication until you have consulted your doctor; abrupt cessation can be harmful.

How can I prevent high blood pressure?
You can help keep your blood pressure at a healthy level and reduce your risk of heart disease by making a few changes in your lifestyle.
• Watch what you eat. Stay away from salt and fat, concentrating instead on foods that are high in fiber, calcium, and magnesium.
• Get plenty of exercise. Regular aerobic workouts condition the heart and keep blood vessels dilated and working properly.
• If you are overweight, try to trim down. Even a small weight reduction can make a big difference.
• If you smoke, now is the time to stop.

Reviewed by Charlotte E. Grayson, MD, September 2003.