

HYPERTENSION

About Your Diagnosis

Hypertension is high blood pressure. Blood pressure is the force at which blood flows through the large blood vessels (the arteries) from the heart. Blood pressure readings, in millimeters of mercury (mm Hg), are divided into two numbers, for example, 110/70. The top number is the systolic pressure, which is the pressure generated when the left ventricle of the heart contracts. The bottom number is the diastolic pressure, the pressure that remains when the ventricle is relaxed to allow filling with blood. A systolic reading greater than 140 at rest or a diastolic reading greater than 90 at rest constitutes hypertension. Hypertension is diagnosed with blood pressure readings. Usually, high readings have to be recorded on at least three separate occasions to be considered accurate. The higher the readings, the more severe is the condition. Readings near these high values, for example, 135/85, might be considered borderline (at risk for developing) hypertension.

Living With Your Diagnosis

Hypertension develops among nearly 2 million persons in the United States each year. Risk for hypertension increases with aging. Approximately 20% of white and 30% of black persons are affected in adulthood. Hypertension is the single greatest risk factor for atherosclerotic (hardening of the arteries) heart disease. Heart disease is the leading cause of death in the United States. Nearly 90% of persons with hypertension have no known cause of the high blood pressure. The other persons may have kidney disease, adrenal or endocrine disorders, or one of a variety of unusual diseases.

Systolic blood pressure normally increases to a high level when someone exercises to help get blood to the exercising muscles. When those muscles stop exercising and do not require as much blood, blood pressure returns to normal. Regular exercise helps train the blood vessels to respond better to changes in pressure and keeps the walls of the vessels elastic (stretchable) and healthy.

Hypertension has been called a silent killer because it usually has no symptoms. Why is it dangerous? High blood pressure causes the heart to work harder to maintain high pumping pressures, and the heart muscle eventually weakens. The higher pressure can damage blood vessels. Imagine a garden hose with water flowing from it onto some dirt. Now imagine what happens to the dirt if you put a narrow nozzle on the end of the hose without changing the flow. The water squirts out with more pressure and tears up the dirt a lot more. A similar thing happens to the inside walls of your blood vessels. After a while they are damaged by the higher pressure. The damage affects smaller arteries most frequently, leading to scarring, which stiffens the vessels. Stiff vessels do not transport blood efficiently and are weaker than normal vessels. Eventually these stiff, weakened vessels may break. If they harden too

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much and become clogged with scar tissue and fatty deposits (such as cholesterol), they fail to deliver blood. Decreased blood flow causes those areas to die. If this happens to the brain, it causes a stroke; in the heart muscle, it causes a heart attack.

After hypertension is diagnosed, any evidence of damage to the small vessels is explored. The retinas of the eye are examined, laboratory tests are performed to check kidney function, and the heart is studied with an electrocardiogram (ECG) and chest radiograph (x-ray). Additional testing is done depending on the findings.

Treatment

If a cause for the condition is known, it should be managed. Most often, however, no cause is found. Hypertension is managed initially with lifestyle changes. If these measures do not successfully correct the blood pressure, antihypertensive medications may be needed. Classification of blood pressure medications includes diuretics, sympathetic nervous system agents (to reduce the nervous system response that tries to keep blood pressure high), receptor blockers (primarily beta-blockers and calcium channel blockers), vasodilators, and angiotensin-converting enzyme (ACE) inhibitors. Each of these drugs functions to reduce the blood volume, decrease the nervous system blood pressure response, or decrease resistance to blood flow. Different persons have different responses to these medications, and combinations are sometimes needed. Changes may be made in medications early in treatment to find what works best for the patient.

The DOs

- * Stop smoking. This is most important, because it lowers blood pressure and helps prevent further damage to the arteries, heart, and lungs.
- * Reduce saturated fats in the diet. This lowers blood pressure and helps weight loss.
- * Reduce sodium in your diet. This decreases fluid retention in the blood. Less fluid to pump lowers the pressure.
- * Decrease your alcohol consumption. Heavy alcohol consumption raises blood pressure.
- * Decrease your caffeine intake. Caffeine is a stimulant that affects the heart.
- * Relax. Reduce stress. Meditation, biofeedback, psychotherapy, and exercise all may be beneficial in reducing stress levels and blood pressure.
- * Lose weight. This is extremely important. Weight loss reduces the workload of the heart by lowering resistance to blood flow. This is best accomplished through dietary changes (reducing calories and fat) and doing regular aerobic exercises such as walking, jogging, bicycling, or swimming.
- * Exercise regularly. Aerobic exercise should be performed for at least 30 minutes a day at least 3 to 4 days per week. Exercise helps lower body weight and body fat, helps control blood pressure, helps reduce stress, helps most persons with diabetics control their disease, and strengthens the heart.

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The DON'Ts

- * Do not forget to carefully monitor and manage other conditions such as diabetes or hyperthyroidism.

When to Call Your Doctor

- * If you notice chest pain, shortness of breath, or changes in vision, urination, ability to speak, swallow, walk, or use your limbs. The danger of hypertension is the damage it can do to other tissues.
- * If you have side effects of your medications, including nausea, vomiting, diarrhea, persistent cough, unusual swelling, or symptoms, such as lightheadedness, of dehydration or blood pressure that is too low.

For More Information

The American Heart Association has information on healthy-heart diets. Call 1-800-242-8721 and ask for the literature department.

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