

# Understanding Hypertension

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A blood pressure reading appears as two numbers. The first, and the higher of the two, is the systolic pressure, which reflects the time it takes for blood to be ejected from the heart into the aorta. The second, or lower number, is called the diastolic pressure, which measures the time between heart beats when the heart is relaxed.

Before age 55, the diastolic blood pressure is a more important predictor of cardiovascular events. After the age of 55, the diastolic blood pressure actually starts to decrease, and the systolic blood pressure best predicts cardiovascular risk.

Blood pressure is tested with an inflatable arm cuff, a sphygmomanometer, and is measured in millimeters of mercury (mmHg) either directly using a stethoscope, or automatically, using an oscillometric device.

According to current adult guidelines published by the American Heart Association, blood pressure is categorized as normal, at 120/80 or less; prehypertensive, a systolic reading of 120 to 139; or hypertensive, a systolic reading of 140 millimeters of mercury or greater.

Risk increases in a continuous manner from a blood pressure of 115/75. The risk doubles with each 20 millimeters increase in the systolic number and each 10 millimeters increase in the diastolic number over these baseline values. If a patient's blood pressure reading is elevated it should be checked again in the next few weeks.

How blood pressure is measured is important. The patient should be seated with both their feet flat on the floor and their back supported. If there is no evidence of end organ damage, such as kidney or cardiac abnormalities, oftentimes, lifestyle changes such as exercise, weight loss, and salt restriction are recommended.

Should this fail, then prescription medication is often necessary. Fortunately, a number of effective medications are now available as generics, since elevated blood pressure usually requires more than one medication for adequate control. This is particularly relevant in patients with diabetes or kidney disease who are treated to achieve a systolic blood pressure goal of less than 130 and a diastolic level of less than 80. Most often, combining medications with a different mechanism of action is most efficacious.

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Although several options exist for the initial medication, it is often a less critical decision since several medications are often necessary for adequate control. Angiotensin converting enzyme (ACE) inhibitors or angiotensin receptor blockers are often the initial drug of choice which patients often tolerate well (except for a cough with the use of ACE inhibitors). With the arrival this year of a generic angiotensin receptor blocker, losartan, this will frequently be the drug of choice since it is both effective and has minimal side effects. The initial or second line of therapy is often the addition of a calcium channel blocker such as amlodipine, which is also a generic, or a low dose diuretic, such as hydrochlorothiazide or chlorthalidone.

With more severe hypertension, it is recommended practice to begin two medications at once, often in a pill which combines two of the above medication groups.

Beta blockers, in general, are less effective as hypertensive agents although they are a heterogeneous group. Generic carvedilol and a newer medication nebivolol, or Bystolic®, impart better blood pressure control without the adverse metabolic effects of other beta blockers on cholesterol and glucose control.

Summarizing, with the evolution of our understanding of hypertension and the need to understand the continuum of risk from a baseline blood pressure of 115/75 and the doubling of risk with each increase of 20/10 mmHg systolic and diastolic blood pressure, it is important to consider both lifestyle changes and aggressive medical therapy. This can be done effectively with a number of generic preparations, and it is quite rare that a goal blood pressure cannot be attained.

High blood pressure, or hypertension, is the most common cardiovascular disease in the United States. It is the leading cause of stroke and a major cause of heart attacks. According to the American Heart Association®, more than 75 million Americans — one in three adults — has high blood pressure. Associated with age, hypertension occurs at a 50 percent incidence rate at age 50 and increases to two-thirds of the population at 60 years of age.