



“From The Pharmacist” – Serve You’s Educational Series on Disease States

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Hypertension: What You Need To Know

What is hypertension?

Hypertension is a disease characterized by persistently high blood pressure in the arteries.¹ This pressure is a measure of how hard the heart is working to pump the blood. A blood pressure measurement consists of two numbers, such as 120/80 and is measured in millimeters of mercury (mm Hg). The top number is known as systolic pressure and measures the pressure of heart contraction (pumping). The bottom number is the diastolic pressure and measures the pressure of the heart refilling (resting).² National guidelines have been developed to define hypertension. For most adults, hypertension is reflected by a blood pressure of greater than or equal to 140/90.^{1,2,3}

What causes hypertension?

There is an identifiable cause of high blood pressure in only about 10% of cases. This is known as *secondary hypertension* and is usually a result of alcohol or cocaine addiction, pregnancy, kidney disease, or specific medication use. In the vast majority of cases (about 90%) the cause is unknown. This is also called *essential hypertension*.^{1,2}

Who is affected?

It is estimated that 30.1% of men and 27.1% of women in the United States have hypertension.¹ The condition often runs in families suggesting a genetic role.² Other risk factors that may contribute to high blood pressure include obesity, lack of exercise, and salt intake. Studies have also shown links to race and increased age. African Americans are more likely to have high blood pressure than whites and those over 55 years old have a 90% lifetime risk of developing hypertension.¹

How do I know if I have hypertension?

While high blood pressure can cause headache, dizziness, and nausea, most often it is associated with no symptoms.² For this reason, everyone should have their blood pressure routinely monitored regardless of family history or risk factors. A diagnosis is not made unless two or more elevated readings are recorded at each of two meetings after the initial screening.¹ Blood pressure recommendations based on the national guidelines are presented in Table 1.³ Those with blood pressures in the pre-hypertension range are at a higher risk to develop hypertension, but are not classified as having hypertension. Those with pressures in stage 1 or 2 should be managed with medication.¹

Complications of hypertension

Hypertension is known as a “silent killer” because of its lack of associated symptoms despite the damage it causes vital organs. Blood pressure left elevated and uncontrolled results in an increased risk for many complications including heart disease, heart attack, stroke, and kidney failure.^{1,2} In fact, one’s risk for cardiovascular disease doubles for every increase of a pressure of 20/10 above 115/75.¹

Prevention and Treatment

Prevention and treatment of hypertension involves lifestyle modification and the use of medications. Targeted aspects of lifestyle include maintaining a healthy weight, eliminating cigarettes, and reducing alcohol and salt intake, and increasing physical activity.^{1,2,4} Implementing these changes has been shown to reduce systolic blood pressure by an average of 2 – 20 mm Hg.¹ Modifying the diet to include more fruits and vegetables and less saturated

fat has also been shown to reduce blood pressure in people with hypertension.⁴

Medication is necessary for those who cannot achieve their blood pressure goal with lifestyle modifications alone.² The initial drug selected for *essential hypertension* if no other disease states are present (like diabetes, heart failure, or kidney disease) is usually from the class of diuretics.¹ Also known as water pills, these medications initially decrease blood pressure through a reduction in plasma volume by increasing urine output. With prolonged use, there is less resistance in the arteries to the flow of blood.¹

The drug most often selected for use is hydrochlorothiazide, abbreviated HCTZ.

Other agents are then added if the previous regimen does not lower blood pressure adequately. These choices are highly individualized based on the unique characteristics of the patient. Classes of medication used include beta-blockers, angiotensin-converting enzyme (ACE) inhibitors, angiotensin II receptor blockers, and calcium channel blockers.¹

Table 1: Classification of Blood Pressure in Adults

Classification	Systolic Blood Pressure, mm Hg		Diastolic Blood Pressure, mm Hg
Normal	Less than 120	and	Less than 80
Pre-hypertension	120-138	or	80-89
Stage 1 hypertension	140-159	or	90-99
Stage 2 hypertension	Greater than or equal to 160	or	Greater than or equal to 100

References:

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4. Sacks FM, Svetkey LP, Vollmer WM, et al. Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. *New England Journal of Medicine* 2001;344:3-10.