



GreenPath Kidney and Hypertension Clinic

Understanding Blood Pressure & Hypertension in 15 Questions:

High blood pressure is one of the most common medical conditions in the United States, yet many people do not fully understand what their blood pressure numbers mean, when they should be concerned, who to manage the pressure.

The following questions and answers explain the fundamentals of blood pressure and hypertension and can help you become more informed about your health.

1. What is blood pressure?

Blood pressure is the force of blood pushing against the walls of your arteries as your heart pumps blood throughout your body. It is measured in millimeters of mercury (mmHg) and is written as two numbers, such as 120/80 mmHg.

2. What determines your blood pressure?

Blood pressure is affected by how strongly and how fast your heart pumps, the amount of fluid and blood in your circulation, how narrow or relaxed your blood vessels are, the elasticity or stiffness of your arteries, and the effects of your kidneys, nervous system, and hormones. These factors work together continuously to maintain adequate blood flow to your organs.

3. Why does my blood pressure keep changing?

Blood pressure naturally changes throughout the day. It can be affected by physical activity, stress, emotions, sleep, pain, caffeine, medications, body position, and the way your blood pressure is measured. This is why we could not find two similar blood pressure readings even if checked immediately after each other.

4. What do the blood pressure numbers mean?

A blood pressure measurement contains two main numbers. Systolic blood pressure is the upper number and represents the pressure in your arteries when your heart contracts. Diastolic blood pressure is the lower number and represents the pressure while your heart relaxes between beats. For example, in 120/80 mmHg, 120 is the systolic pressure and 80 is the diastolic pressure. Pulse pressure is the difference between systolic and diastolic pressure. Mean arterial pressure (MAP) represents the average arterial pressure during one cardiac cycle and can be estimated from the systolic and diastolic pressures.



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5. What is hypertension?

Hypertension, or high blood pressure, occurs when blood pressure remains higher than the recommended range over time. Under current U.S. ACC/AHA classifications, hypertension begins at 130 mmHg systolic or 80 mmHg diastolic. Because blood pressure naturally varies, hypertension generally should not be diagnosed from a single routine reading. Repeated office measurements and, when appropriate, home or 24-hour ambulatory blood pressure monitoring may be used.

6. What are the stages of hypertension?

Using the ACC/AHA classification: **Normal** is less than 120/80 mmHg. **Elevated** blood pressure is systolic 120–129 mmHg with diastolic less than 80 mmHg. **Stage 1** hypertension is systolic 130–139 mmHg or diastolic 80–89 mmHg. **Stage 2** hypertension is systolic 140 mmHg or higher or diastolic 90 mmHg or higher. Treatment decisions also consider overall cardiovascular risk and other medical conditions.

7. Why should everyone have their blood pressure checked?

High blood pressure usually causes no symptoms, so many people may have it without knowing it. Finding elevated blood pressure early provides an opportunity to make lifestyle changes and, when appropriate, start medication before significant and irreversible damage occurs.

8. What are the symptoms of hypertension?

Most people with hypertension have no symptoms, even when their blood pressure has been elevated for years. Very high blood pressure can sometimes occur with symptoms such as severe headache, chest pain, shortness of breath, weakness, confusion, or vision changes. These symptoms may indicate a medical emergency and require immediate evaluation. Do not rely on symptoms to determine whether your blood pressure is high measure it.

9. Why should hypertension be treated?

Over time, uncontrolled high blood pressure can damage blood vessels and vital organs. It increases the risk of heart attack, stroke, heart failure, chronic kidney disease, vision problems, vascular disease, and cognitive impairment. Controlling blood pressure substantially reduces the risk of cardiovascular and other complications.



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10. How do blood pressure medications work?

Different blood pressure medications work in different ways. Depending on the medication, they may relax or widen blood vessels, help the kidneys remove excess sodium and fluid, reduce the effects of hormones that raise blood pressure, reduce heart rate or the force of heart contraction, or reduce nervous-system signals that constrict blood vessels. Many people need more than one type of medication to achieve good blood pressure control.

11. How should I measure my blood pressure correctly at home?

Use a validated automatic upper-arm monitor with the correct cuff size. Avoid caffeine, smoking, and exercise for at least 30 minutes beforehand. Empty your bladder and sit quietly for about 5 minutes. Sit with your back supported, feet flat on the floor, legs uncrossed, and the cuff on your bare upper arm at heart level. Do not talk or move during the measurement. Take two readings about one minute apart and record the results.

12. When is high blood pressure an emergency?

If your blood pressure is higher than 180/120 mmHg, wait at least one minute and measure it again. If it remains very high with or without symptoms such as chest pain, shortness of breath, severe headache, weakness or numbness, difficulty speaking, confusion, vision changes, or other severe symptoms, seek emergency medical care immediately.

13. What is the relation of blood pressure with the kidneys?

The kidneys help regulate the blood pressure through certain hormones to control the fluid and sodium balance. There are certain mechanisms in the kidney which control the amount of fluid and salt that need to be removed or held to maintain stable pressure. With persistently elevated blood pressure it can damage kidney vessels leading to higher blood pressure.

14. How can I lower my blood pressure?

Blood pressure can often be improved through healthy lifestyle changes including reducing excess sodium, eating a heart-healthy diet rich in vegetables, fruits, maintaining a healthy weight, exercising regularly, avoiding tobacco, limiting excessive alcohol, getting adequate sleep, managing stress, taking prescribed medications consistently, monitoring blood pressure at home when recommended, and keeping regular healthcare appointments. Medications are essential part of management.



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15. When should I see a hypertension or kidney specialist?

A specialist evaluation may be helpful when blood pressure remains difficult to control despite treatment, hypertension begins at an unusually young age or becomes suddenly worse, there is concern for a secondary cause of hypertension, kidney function is reduced, protein or blood is found in the urine, electrolyte abnormalities are present, or your healthcare professional recommends specialized evaluation. A kidney specialist (nephrologist) can evaluate both kidney disease and difficult-to-control hypertension.

Medical Disclaimer

This information is provided for general educational purposes only and is not intended to diagnose or treat any medical condition or replace individualized medical advice. Blood pressure targets and treatment recommendations vary among individuals. Discuss your blood pressure readings, medications, and treatment goals with your healthcare professional. Seek immediate medical attention for symptoms that may represent a medical emergency.